IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

NORTHWEST ENVIRONMENTAL ADVOCATES, an Oregon non-profit corporation,

Plaintiff,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; MICHAEL REGAN, in his official capacity as Administrator of the Environmental Protection Agency; and **MICHELLE PIRZADEH**, in her official capacity as Acting Regional Administrator Environmental Protection Agency Region 10,

Defendants.

Case No. _____

COMPLAINT

Pursuant to the Administrative Procedure Act, Clean Water Act

NATURE OF THE CASE

1. Through this action, Plaintiff Northwest Environmental Advocates ("NWEA") challenges the failure of Defendant United States Environmental Protection Agency ("EPA") to ensure the protection and restoration of the marine waters of Puget Sound in the State of Washington in violation of the mandates of the Clean Water Act ("CWA" or "Act"), 33 U.S.C. § 1251, *et seq*.

2. For over three decades, the marine waters of Puget Sound have been known to be impaired by dangerously low levels of dissolved oxygen, caused by nitrogen pollution, and high levels of toxic pollutants. Along with oxygen depletion, nitrogen pollution fuels extensive algal

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

blooms in Puget Sound, some toxic to people, some toxic to shellfish, and some that are upending the food chain that supports imperiled Chinook salmon and orca whales.

3. The quality of water in Puget Sound and its tributaries has degraded as population has increased and is predicted to further degrade based on estimates of future population growth. The Washington Department of Ecology (hereinafter "Ecology" or "Washington") predicts a 40 percent increase in nitrogen levels in the next few decades. Combined with climate change, this pollution increase is predicted to significantly worsen deleterious dissolved oxygen levels in Puget Sound.

4. Nitrogen is a form of nutrient pollution that, while essential for the growth of plant life, in excess leads to excessive growth of algae that die and, in decaying, consume life-sustaining oxygen from water. Nitrogen causes myriad cascading environmental effects including the following: more widespread and longer-lasting algal blooms; increases in harmful algal blooms ("HAB") that create toxins; depleted dissolved oxygen; increased acidification of waters that, in turn, causes effects such as thinning of shellfish shells; an explosion of jellyfish populations; and fundamental changes to the food web that include the growth of dinoflagellate algae that ravage the diatoms and copepods that form the very base of the marine food web and, in turn, starve forage fish such as herring and the species that prey upon them. These shifts lead to reduced food availability for salmonids that, in turn, affect larger marine life such as the endangered Southern Resident killer whale.

5. Ecology has continued to issue and reissue permits to sewage treatment plants discharging to Puget Sound and its tributaries, none of which includes nutrient effluent limits sufficient to protect Puget Sound.

6. Ecology has continued to issue and reissue permits to sewage treatment plants discharging to Puget Sound and its tributaries, almost none of which includes effluent limits for toxic pollutants and none of which includes effluent limits for a class of pollutants including but not limited to pharmaceuticals, industrial and food additives, some pesticides, plasticizers, flame

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

retardants, and personal care products referred to as "contaminants of emerging concern." Yet, in 2010, Ecology and EPA issued a report showing that there is a high potential for removal of such toxics when nutrient removal technology is installed at sewage treatment plants.

7. Beyond sewage treatment plants, Ecology has no program or plan to reduce the input of pollution from nonpoint sources, such as stormwater and polluted runoff from farming and logging, to Puget Sound and its tributaries despite its having found that such sources are significant contributors to nitrogen levels in Puget Sound.

8. Despite having worked for many years to develop the technical basis of Total Maximum Daily Loads ("TMDL") pursuant to the requirements of CWA section 303(d) to address nitrogen in Puget Sound, Ecology has instead decided to issue a "TMDL Alternative," an action that EPA has approved in at least one document entitled "Environmental Performance Partnership Agreement, State Fiscal Years 2020-2021 July 1, 2019 to June 30, 2021."

9. The planned issuance of a "TMDL Alternative" in lieu of the required TMDLs means that Ecology and EPA will not take regulatory actions necessary to comply with the CWA and restore water quality of Puget Sound to water quality standards.

10. In doing so, EPA has violated its mandatory duty under CWA section 303(d), 33 U.S.C. § 1313(d)(2), to develop TMDLs for Puget Sound. Additionally, EPA's decision to approve Ecology's "TMDL Alternative" in the Performance Partnership Agreement ("PPA") was arbitrary, capricious, and contrary to the CWA, within the meaning of the APA, 5 U.S.C. § 706.

JURISDICTION AND VENUE

11. This Court has jurisdiction pursuant to the judicial review provision of the Administrative Procedure Act, 5 U.S.C. § 702, as well as the federal question statute, 28 U.S.C. § 1331.

12. On June 4, 2021, NWEA sent EPA the required notice of intent to sue, pursuant to 33 U.S.C. § 1365(b)(1)(A). That notice of intent to sue is attached hereto as Exhibit 1.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

13. Venue is properly vested in this Court pursuant to 28 U.S.C. § 1391(e) because a substantial part of the events or omissions giving rise to the claims occurred in Seattle, Washington, where EPA's Region 10 administrative office is located.

PARTIES

14. The plaintiff in this action is NORTHWEST ENVIRONMENTAL ADVOCATES. Established in 1969, NWEA is a regional non-profit environmental organization incorporated under the laws of Oregon in 1981 and organized under section 501(c)(3) of the Internal Revenue Code. NWEA's principal place of business is in Portland, Oregon. NWEA's mission is to work through advocacy and education to protect and restore water and air quality, wetlands, and wildlife habitat in the Northwest, including Washington. NWEA employs advocacy with administrative agencies, community organizing, strategic partnerships, public record requests, information sharing, lobbying, education, expert review, and litigation to ensure better implementation of the laws that protect and restore the natural environment. NWEA has participated in the development of CWA programs to control both point and nonpoint sources in the State of Washington for many years, including the state's TMDL program by, *inter alia*, having brought suit in 1991 against EPA for its failure to establish TMDLs for the State of Washington and again in 2019; having brought suit against EPA for not acting on TMDLs for the Deschutes River basin and, later, for not replacing those TMDLs it subsequently disapproved, and not completing TMDLs for Budd Inlet and Capitol Lake; and serving on EPA's TMDL federal advisory committee from 1996 to 1998.

15. NWEA's members regularly use and enjoy the waters and adjacent lands of Puget Sound. NWEA's members have definite future plans to continue using them for recreational, scientific, aesthetic, spiritual, conservation, educational, employment, and other purposes. Many of these interests revolve around viewing sensitive salmonid species, the endangered Southern Resident killer whales, and other aquatic and aquatic-dependent species that are under threat by pollution in the waters at issue in this lawsuit. The use and enjoyment that NWEA's members

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

derive from viewing these species, and otherwise recreating on or near and enjoying the waters of Puget Sound and its tributaries, is diminished by the effects of pollution, including specifically nitrogen and toxic pollution. NWEA's members would derive more benefits and enjoyment from their use of these waters if these pollutants were not adversely affecting water quality and aquatic and aquatic-dependent species in these waters.

16. Some of NWEA's members derive or used to derive recreational and aesthetic benefits by fishing and shellfish gathering in Puget Sound, its embayments and tributaries. These members have curtailed their fishing and shellfish gathering in the Sound and its tributaries, or no longer fish and gather shellfish in the Sound, due in part to concerns regarding pollutants and their effect on fisheries. Successful completion of TMDLs to address these pollution problems in Puget Sound and its tributaries is a critical step in fully implementing the goals of the CWA for these waters, fully protecting salmonids, orcas, other aquatic and aquatic-dependent species, and improving water quality. EPA's failure to establish TMDLs for the waterbodies at issue in this lawsuit, along with EPA's approval of Ecology's "TMDL Alternative," puts these species at risk and threatens or negatively affects the interests of NWEA's members.

17. The recreational, aesthetic, conservation, employment, scientific, and other interests of NWEA and its members have been, are being, and unless relief is granted, will continue to be adversely affected and irreparably injured by EPA's failure to comply with the CWA.

18. Defendant U.S. ENVIRONMENTAL PROTECTION AGENCY is the federal agency charged with the administration of the CWA, and specifically with approving or disapproving state identification of impaired waters and state TMDL submissions under section 303(d)(2) of the CWA, 33 U.S.C. § 1313(d)(2).

/// /// ///

/// /// ///

/// /// ///

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

LEGAL BACKGROUND

The Clean Water Act and Water Quality Standards that Establish Water Quality-Based Pollution Controls

19. Congress adopted amendments to the CWA in 1972 in an effort "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). While the primary goal of the CWA is to eliminate the discharge of pollutants into navigable waters entirely, Congress established "an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife." *Id.* § 1251(a)(1)–(2).

20. To meet these statutory goals, the CWA requires states to develop water quality standards that establish, and then protect, the desired conditions of each waterway within the state's regulatory jurisdiction. 33 U.S.C. § 1313(a). Water quality standards must be sufficient to "protect the public health or welfare, enhance the quality of water, and serve the purposes of [the CWA]." *Id.* § 1313(c)(2)(A). Water quality standards establish the water quality goals for a waterbody. 40 C.F.R. §§ 131.2, 131.10(d). EPA is charged with approving or disapproving a state's water quality standards or, in some instances, establishing standards for a state. *See* 33 U.S.C. § 1313(c).

21. Water quality standards are comprised of designated uses, numeric and narrative criteria to protect the designated uses, and an antidegradation policy that ensures that beneficial uses dating to 1975 are protected and high-quality waters will be maintained and protected. 33 U.S.C. §§ 1313(c)(2), (d)(4)(B); 40 C.F.R. Part 131, Subpart B. Overall, water quality standards establish the water quality goals for a waterbody. 40 C.F.R. §§ 131.2, 131.10(d).

22. States must designate uses based on consideration of the use and value of a waterbody for public water supplies, protection and propagation of fish, shellfish, and wildlife, recreation, and agricultural, industrial, and other purposes. 40 C.F.R. § 131.10(a).

23. Water quality criteria must be set at a level necessary to protect the designated uses of a waterbody. 33 U.S.C.§ 1313(c)(2); 33 U.S.C.§ 1313(d)(4)(B); 40 C.F.R. Part 131, Subpart B. Criteria "must be based on sound scientific rationale and must contain sufficient

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

parameters or constituents to protect the designated use." 40 C.F.R. § 131.11(a)(1). The criteria must also be set at the level necessary to protect the most sensitive use of a waterbody. *Id.*

24. States may also establish narrative water quality criteria "to supplement numerical criteria." 40 C.F.R. § 131.11(b)(2).

25. The third component of water quality standards, the antidegradation policy, stems from the CWA's dictate to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The antidegradation policy must assure that water quality that meets or exceeds water quality standards is maintained and that no further degradation is allowed for waters that do not meet water quality standards. 40 C.F.R. § 131.12. States must also develop antidegradation policy implementation methods. *Id*.

26. Among other things, water quality standards serve as the regulatory basis for establishing water quality-based controls for so-called point sources of pollution, as required by sections 301 and 306 of the CWA, 33 U.S.C. §§ 1311 & 1316. Point source discharges are regulated under National Pollutant Discharge Elimination System ("NPDES") permits, which must contain limitations "necessary to meet water quality standards." 33 U.S.C. §§ 1311(b)(1)(C), 1342(a). Water quality standards are thus integral to the regulation of point source pollution.

27. Water quality standards also are used to establish measures to control nonpoint sources pollution. Unlike point source pollution, nonpoint source pollution is generally considered to be any pollution that cannot be traced to a single discrete conveyance. Examples include runoff from agricultural or forestry lands and increased solar radiation caused by the loss of riparian vegetation. Congress did not establish a federal permitting scheme for nonpoint sources of pollution, such as pollution from timber harvesting and agriculture. Instead, Congress assigned states the task of implementing water quality standards for nonpoint sources, with oversight, guidance, and funding from EPA. *See, e.g.*, 33 U.S.C. §§ 1288, 1313, 1329. Even so, water quality standards apply to all pollution sources, point and nonpoint alike.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

List of Impaired Waters: Every Two Years the State Must Identify Waters that Are Not Meeting the Water Quality Standards

28. CWA section 303(d)(2) requires states to "submit to the Administrator from time to time" a list of "waters identified and loads established under" subsections 303(d)(1)(A)–(D), including, among other components, a list of waters for which technology-based effluent limitations "are not stringent enough to implement any water quality standard applicable to such waters." 33 U.S.C. § 1313(d)(2); *see also* 40 C.F.R. §§ 130.7(b); 130.10(b), (d).

29. Such waters are called "water quality limited" or "impaired" waters. 40 C.F.R. § 131.3(h) ("*Water quality limited segment* means any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards.") (emphasis in original).

30. EPA has promulgated rules that establish the frequency of such submissions, consistent with the statute. Every two years states must compile their list of impaired waters and submit them to EPA for approval. 33 U.S.C. § 1313(d)(1)(A), (d)(2). These lists are commonly called "303(d) lists" in reference to section 303(d) of the CWA, 33 U.S.C. § 1313(d).

31. The 303(d) lists serve several important functions, in addition to identifying which waterbodies must receive the required TMDL clean-up plans. The list provides the public and local governments with specific information about the health of the waterbodies throughout the state and identifies which waterbodies may not be safe to use. The list identifies where improved nonpoint source controls of polluted runoff from land activities, such as farming and logging, are needed, as well as priorities for habitat restoration. Finally, when a waterbody is listed as water quality limited, additional protections are triggered under the CWA's NPDES permitting requirements to ensure impaired waters are not further degraded. *See* 40 C.F.R. §§ 122.4, 122.44.

32. For purposes of listing impaired waters, the applicable water quality standards include waters' designated uses, numeric criteria, narrative criteria, and antidegradation requirements. 40 C.F.R. § 130.7(b)(3).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

33. In order to identify water quality-limited segments, each state, at a minimum, must "assemble and evaluate all existing and readily available water quality-related data and information" for certain categories of waters that include, but are not limited to, "those for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions." 40 C.F.R. § 130.7(b)(5), (b)(5)(iii).

34. "The Regional Administrator shall approve a list developed under § 130.7(b) . . . only if it meets the requirements of § 130.7(b)." 40 C.F.R § 130.7(d)(2).

35. A state must submit an updated impaired waters list to EPA on April 1 of every even-numbered year. 40 C.F.R. § 130.7(d)(1). States submit these lists to EPA for approval or disapproval. 33 U.S.C. § 1313(d)(2). EPA must act on the list within 30 days; if it disapproves the list, EPA must establish a replacement list within 30 days of the disapproval. 33 U.S.C. § 1313(d)(2).

Total Maximum Daily Loads: The States Must Develop Clean-Up Plans to Ensure Pollution Levels Are Reduced to Meet Water Quality Standards

36. For each of their 303(d)-listed impaired waters, states must establish a "total maximum daily load" ("TMDL") of pollutants "at a level necessary to implement the applicable water quality standards[.]" 33 U.S.C. § 1313(d)(1)(C). To encourage prompt state action even where water quality data are imperfect, the Act requires that TMDLs include a "margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." *Id*.

37. States are required to "establish a priority ranking" for their 303(d)-listed impaired waters, "taking into account the severity of the pollution and the uses to be made of such waters." 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(4). States "shall establish" TMDLs "in accordance with the priority ranking." 33 U.S.C. § 1313(d)(1)(C). "Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

38. A TMDL is the total daily loading of a pollutant for a particular waterbody or segment. *See* 40 C.F.R. §130.2(i). The total amount of a pollutant that may enter a waterbody while ensuring the waterbody is still meeting water quality standards is called its "loading capacity." 40 C.F.R. § 130.2(f). TMDLs for individual waterbodies or segments are often bundled together by watershed or subbasin in the same analytical document.

39. After calculating a waterbody's loading capacity, a TMDL then distributes portions of the total loading capacity to individual sources or categories of pollution sources, like dividing up a pie. These allocations include both "load allocations" for nonpoint sources and "wasteload allocations" for point sources of pollution. 40 C.F.R. § 130.2(i). The purpose of load and wasteload allocations is to allocate the total amount of pollution that may enter a waterbody between all the sources of pollution, including both point and nonpoint sources, thereby restricting pollution inputs sufficiently to attain and maintain water quality standards. 40 C.F.R. § 130.7(c).

40. A TMDL is the CWA mechanism designed to ensure that assumptions about nonpoint source load reductions that "make more stringent load allocations practicable, then wasteload allocations can be made less stringent." 40 C.F.R. § 130.2(i). In this way, "the TMDL process provides for nonpoint source control tradeoffs." *Id*. Without "reasonable assurance" that nonpoint source controls will be implemented, TMDLs must require maximum pollution controls from NPDES permitted sources.

41. As with water quality standards and impaired waters lists, states must submit TMDLs to EPA for approval or disapproval. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.2(d). EPA must act on the TMDL submission within 30 days, and if it disapproves the TMDL, EPA must establish a replacement TMDL within 30 days of the disapproval. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2) ("If the Regional Administrator disapproves such listings and loadings, he shall, not later than 30 days after the date of such disapproval, identify such waters in such State

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

and establish such loads for such waters as determined necessary to implement applicable [water quality standards].").

42. Subsequent to EPA approval of TMDLs, the permitting authority for a state must ensure that "[e]ffluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocations for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7." 40 C.F.R. § 122.44(d)(1)(vii)(B). The approved load allocations serve as the basis for state and local programs for controlling nonpoint source pollution, including state programs that receive federal funds under CWA section 319, 33 U.S.C. § 1329. Once EPA approves a TMDL, the state must also incorporate the TMDL into its "continuing planning process" under CWA section 303(e), 33 U.S.C. § 1313(e)(3)(C).

43. In guidance published more than 20 years ago, EPA recognized that it "needs an overall plan for completing and approving TMDLs for all listed waters" and that each EPA Region should "secure a specific written agreement with each State in the Region establishing an appropriate schedule for the establishment of TMDLs for all waters on the most recent section 303(d) list," with those schedules being "expeditious" and extending "from eight to thirteen years in length." Memorandum from Robert Perciasepe, Assistant Administrator, EPA Office of Water, to Regional Administrators and Regional Water Division Directors: New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs) (1997) at 3.[1]

44. Thus, as this Court itself has noted, section 303(d) of the CWA "expressly requires the EPA to step into the states' shoes if their TMDL submissions . . . are inadequate." *Alaska Center for the Envt. v. Reilly*, 762 F. Supp. 1422, 1429 (W.D. Wa. 1993). Further, because "Congress prescribed early deadlines for the TMDL process," appropriate TMDL schedules must be counted in "months and a few years, not decades." *Idaho Sportsmen's Coalition v. Browner*, 951 F. Supp. 962, 967 (W.D. Wa. 1996).

[1] *Available at* https://www.epa.gov/sites/default/files/2015-10/documents/2003_10_21_tmdl_ratepace1997guid_0.pdf (last visited December 3, 2021).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

38. Congress intended for TMDLs to be developed promptly, without undue delay. 33 U.S.C. § 1313(d). To that end, the Ninth Circuit, along with other courts, has adopted—and recently reaffirmed—the "constructive submission" doctrine. Pursuant to this doctrine, a clear and unambiguous decision by a state to not submit TMDLs to EPA will be construed as the constructive submission of no TMDLs, "which in turn triggers EPA's nondiscretionary duty to act" under CWA section 303(d)(2) by preparing its own TMDLs instead. *Columbia Riverkeeper v. Wheeler*, 944 F.3d 1204, 1208 (9th Cir. 2019).

Performance Partnership Grants and Performance Partnership Agreements

39. States may apply for Performance Partnership Grants ("PPG") from EPA. 40 C.F.R. §§ 35.101(a)(3), 35.130. The PPG application process requires a Work Plan, which is the product of negotiations between the applicant state and the EPA Regional Administrator. *Id.* § 35.107(a). PPG Work Plans "must be consistent with applicable federal statutes; regulations; circulars; executive orders; and EPA delegations, approvals, or authorizations." *Id.* § 35.107(b)(3); *see also id.* § 35.111(a)(2). Performance Partnership Agreements ("PPA") may be used as work plans for PPGs. *Id.* §§ 35.102, 35.107(c).

40. PPAs are defined as "[a] negotiated agreement signed by the EPA Regional Administrator and an appropriate official of a State agency and designated as a Performance Partnership Agreement. Such agreements typically set out jointly developed goals, objectives, and priorities; the strategies to be used in meeting them; the roles and responsibilities of the State and EPA; and the measures to be used in assessing progress." 40 C.F.R. § 35.102.

41. The EPA Regional Administrator and the state jointly develop an evaluation of progress made on the Work Plan, no less than annually. 40 C.F.R. § 35.115. Reports must include specified elements, *id.* § 35.115(b), and the Regional Administrator is required to ensure that they are completed, *id.* § 35.115(d). The Regional Administrator is responsible for negotiating resolution of insufficient progress under the Work Plan and for taking appropriate

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

measures under 2 C.F.R. § 200.338 that include withholding of payments, denying use of funds, terminating the award, and taking other actions that are legally available. 40 C.F.R. § 35.115(d).

Judicial Review under the Clean Water Act's Citizen Suit Provision

42. The CWA authorizes citizen suits against the EPA Administrator "where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator." 33 U.S.C. § 1365(a)(2).

43. The district courts have jurisdiction over suits against the Administrator arising under the citizen suit provision and may "order the Administrator to perform such act or duty" the non-performance of which is the basis for the claim. 33 U.S.C. § 1365(a). Regulations promulgated by EPA to implement the CWA may establish for the agency a nondiscretionary duty the failure to undertake of which is subject to review under the citizen suit provision of the CWA where the duty is clear-cut and readily ascertainable from the regulatory language.

Judicial Review under the Administrative Procedure Act

44. Section 702 of the Administrative Procedure Act ("APA") provides a private cause of action to any person "suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute." 5 U.S.C. § 702.

45. Only final agency actions are reviewable under the APA. 5 U.S.C. § 704. Agency action includes a "failure to act." *Id.* § 551(13). Under the APA, a court must "hold unlawful and set aside agency actions, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;" "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;" or "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (C), (D).

/// /// ///

/// /// ///

/// /// ///

/// /// ///

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

FACTUAL BACKGROUND

Washington's Water Quality Standards

Designated Uses

46. Washington has established several categories of designated uses for fresh water, such as "aquatic life uses," which include "all indigenous fish and nonfish aquatic species" including but not limited to char (bull trout and Dolly Varden), salmonids (salmon and steelhead), non-anadromous interior redband trout, and indigenous warm water species (dace, redside shiner, chiselmouth, sucker, and northern pikeminnow); recreational uses (extraordinary primary contact recreation, primary contact recreation, and secondary contact recreation); and water supply uses (domestic, agricultural, industrial, and stock watering). WAC 173-201A-200(1)-(3). Fresh water use designations are described, designated, and mapped at WAC 173-201A-600 and WAC 173-201A-602.

47. Washington's use designations for marine waters are by category—"extraordinary," "excellent," "good," and "fair,"—and apply to salmonids and other fish species; clam, oyster, and mussel, rearing and spawning; and crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.). *See* WAC 173-201A-210. Use designations for Washington's marine surface waters are described and designated at WAC 173-201A-210, WAC 173-201A-610, and WAC 173-201A-612.

Numeric and Narrative Criteria

48. Washington's water quality standards include numeric criteria for a wide range of conventional, toxic, and non-toxic pollutants, designed to protect aquatic life uses. These include, for example, numeric criteria for temperature that establish maximum levels of temperature for specific life cycle stages of cold-water species of salmon, steelhead, and bull trout (char), many of which are listed as threatened or endangered pursuant to the Endangered Species Act, 16 U.S.C. § 1531, *et seq*. *See* WAC 173-201A-200(1)(c), Table 200(1)(c). The standards also include minimum levels of dissolved oxygen for life cycle stages in fresh water. *See* WAC 173-201A-200(1)(d), Table 200(1)(d). Numeric criteria for marine waters also include

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

minimum levels of dissolved oxygen. *See* WAC 173-201A-210 (1)(d), Table 210(1)(d). Dissolved oxygen numeric criteria for Puget Sound range from 7.0 mg/L for extraordinary quality waters to 4.0 mg/L for fair quality waters.

49. Numeric criteria to protect fresh water and marine aquatic uses and human health, from consumption of water and organisms, from toxic substances—including metals, chemicals, and pesticides—are established at WAC 173-201A-240(5), Table 240.

50. Washington has established two generally applicable narrative criteria for fresh and marine waters. WAC 173-201A-260(2).

51. First, "[t]oxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health." *Id*. 173-201A-260(2)(a).

52. Second, "[a]esthetic values must not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste[.]" *Id*. 173-201A-260(2)(b).

53. Washington's narrative criteria are essential to the protection of its waters. For example, Washington does not have numeric criteria for the protection of rivers and streams from common forms of nutrient pollution, such as nitrogen and phosphorus. Nutrient pollution, which is a stated national priority of EPA's and a significant pollution problem in Puget Sound, causes extensive algal blooms that deplete dissolved oxygen, alter food webs, and can release toxins hazardous to people, pets, marine life, and wildlife. Washington has no numeric criteria for the protection of wildlife, such as marine and freshwater mammals and aquatic-dependent birds, relying solely on its narrative criteria and designated uses for their protection. Washington also must rely on its narrative criteria for protection of aquatic species from pharmaceuticals and personal care products and other so-called "contaminants of emerging concern" because EPA has not recommended and Washington has not adopted any numeric criteria for these pollutants.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

Antidegradation Policy and Implementation Methods

54. Washington's antidegradation policy seeks to "[r]estore and maintain the highest possible quality of the surface waters of Washington." WAC 173-201A-300(2)(a). The policy includes a so-called Tier 1 requirement that "[e]xisting and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as provided for in this chapter." WAC 173-201A-310(1). Existing uses are defined as "those uses actually attained in fresh or marine waters on or after November 28, 1975, whether or not they are designated uses." WAC 173-201A-020; *see also* 40 C.F.R. § 131.3(e). Washington's antidegradation policy calls for Ecology to "take appropriate and definitive steps to bring the water quality back into compliance with the water quality standards" for waters that do not meet assigned criteria or protect existing or designated uses. WAC 173-201A-310(2). A TMDL is an appropriate first step with which to bring a waterbody into compliance with applicable standards.

EPA and Ecology Performance Partnership Agreements

55. For many years, EPA and Ecology have documented their contractual agreement and "commitments" between the two agencies relating to federally-funded projects addressing, *inter alia*, water quality programs in Performance Partnership Agreements ("PPA").

56. The most recent PPA between EPA and Ecology covers the period between July 1, 2021 and June 30, 2023 and was signed on June 21, 2021 by Michelle Pirzadeh, Acting EPA Region 10 Regional Administrator, and Laura Watson, Director of Ecology.[2] As with previous PPAs, this 2021–2023 PPA was put out for public comment. As with PPAs going back to 2007, the 2021–2023 PPA identifies "protect[ing] and restor[ing] Puget Sound as a "strategic priorit[y]," *id.* at 11, noting that "recognition of the national importance of Puget Sound enables the EPA to focus dedicated federal funds to Puget Sound cleanup goals and restoration efforts," *id*. at 35–36. This PPA also commits EPA and Ecology to "work together on addressing priority

[2] *See* https://apps.ecology.wa.gov/publications/documents/2101002.pdf (last visited December 3, 2021).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

nutrient problems to reduce current loadings of nitrogen and phosphorus to surface waters." *Id.* at 81.

57. According to the 2021–2023 PPA, it "reflects the mutual understandings between Ecology and EPA for program implementation and extent of oversight" and "serve[s] as the work plan for PPG funds provided to Ecology [in accordance with Section 106 of the CWA]." *Id*. at 69.

58. In the previous PPA, for 2019 to 2021, EPA and Ecology agreed that the state would issue an alternative to a Puget Sound nitrogen TMDL. *See* EPA/Ecology, *Environmental Performance Partnership Agreement, State Fiscal Years 2020-2021 July 1, 2019 to June 30, 2021* (June 2019) (hereinafter "2019–2021 PPA").[3]

59. The 2021–2023 PPA, as do previous PPAs, requires written status reports on its progress as well as regular meetings to evaluate progress.

Puget Sound and its Poor Quality

60. Puget Sound is an inlet of the Pacific Ocean including marine and estuarine waters, open to the Strait of Juan de Fuca through Admiralty Inlet, and to a lesser extent, Deception Pass and Swinomish Channel, and open to the Strait of Georgia through Bellingham Bay, Rosario Strait, and Haro Strait, that generally surround the San Juan Islands. Puget Sound is composed of six primary basins: South, Central, Whidbey, Admiralty Inlet, Hood Canal, and Northern. These waters together are also called the Salish Sea.

61. In the 2007–2009 PPA, EPA and Ecology described Puget Sound as the "Crown Jewel" of Washington State, stating that "[b]oth EPA and Ecology are dedicated to the protection, clean-up and restoration of Puget Sound," and noting that "EPA has included Puget Sound as one of the few estuaries that are specifically included in its National Strategic Plan," an inclusion that "will enable EPA to focus more resources and federal funds towards clean-up goals and restoration efforts." EPA/Ecology, *Environmental Performance Partnership*

[3] *See* https://apps.ecology.wa.gov/publications/documents/1901004.pdf (last visited December 3, 2021).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

Agreement for July 1, 2007 to June 30, 2009 (August 22, 2007) (hereinafter "2007–2009 PPA").

62. In that PPA, the two agencies declared that:

> The welfare of all living creatures in the Puget Sound depends on clean and healthy marine waters. Over the past century, human activities resulting from growth and development in and around the Puget Sound have contributed greatly to nutrient and pathogen pollution. Environmental pollution is endangering the overall health of Puget Sound and is pushing many marine species to the brink of extinction. For example, more than 40 species in the region are on the federal and state lists of threatened and endangered species due in large part to chemical pollution and habitat loss.

Id. at 23.

63. Species that depend upon Puget Sound include many threatened and endangered species identified as such under the Endangered Species Act. These include the following: Puget Sound Chinook, Hood Canal summer chum salmon, Lake Ozette sockeye, and Puget Sound steelhead, all of which were listed in 2005. NMFS then listed critical habitat in 2005 for many species of West Coast salmonids, including Puget Sound Chinook, Hood Canal summer chum salmon, Lake Ozette sockeye. In 2010, NMFS listed the Puget Sound/Georgia Basin distinct population segment ("DPS") of yelloweye rockfish and canary rockfish as threatened, and bocaccio as endangered. Additionally, the Southern Resident killer whale (orca) DPS was listed as an endangered species in 2005, with critical habitat designated in 2006 and again in 2021.[4]

64. The waters of Puget Sound are impaired by nitrogen pollution, which removes dissolved oxygen from water as organic nitrogen deaminates into ammonium and then goes through the process of nitrification to become nitrate, consuming oxygen in the process. Nitrogen also fuels excessive algae growth in surface waters. When the algae die, they sink to the bottom

[4] *See* 64 Fed. Reg. 58,910, 58,933 (Nov. 1, 1999) (Bull Trout Listing); 75 Fed. Reg. 53,898 (Oct. 18, 2010) (Bull Trout Critical Habitat Designation); 70 Fed. Reg. 37,160 (June 28, 2005) (Puget Sound Chinook, Hood Canal Summer Chum Salmon, Lake Ozette Sockeye, and Puget Sound Steelhead); 70 Fed. Reg. 52,630 (Sept. 2, 2005) (Designation of Critical Habitat for Puget Sound Chinook, Hood Canal Summer Chum Salmon, and Lake Ozette Sockeye); 75 Fed. Reg. 22,276 (April 28, 2010) (Puget Sound/Georgia Basin DPS of Yelloweye Rockfish, Canary Rockfish, and Bocaccio Listing); 70 Fed. Reg. 69,903 (Nov. 18, 2005) (Southern Resident Killer Whale DPS Listing); 71 Fed. Reg. 69,054 (Nov. 29, 2006) (Critical Habitat Designation of Southern Resident Killer Whale DPS); 86 Fed. Reg. 41,668 (Aug. 2, 2021) (Critical Habitat Designation of Southern Resident Killer Whale DPS).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

of a waterbody where they are consumed by bacteria. These bacteria, combined with the natural respiration of other oxygen-breathing organisms, use up the available oxygen in the lower water column, gradually reducing the dissolved oxygen concentration to unhealthy levels.

65. Warm weather and high levels of sunlight exacerbate hypoxic (low oxygen) conditions; therefore, they tend to occur during summer months. High temperatures also lower levels of dissolved oxygen in water.

66. Some of the algal blooms in Puget Sound are toxic and generate a range of paralytic, diarrheic, and neurotoxic effects on people and animal life. Some macroalgae in Puget Sound pile up on beaches.

Figure 1. Macroalgae Deposited on Edmonds Beach, Puget Sound (2016).

67. Nitrogen entering Puget Sound from municipal discharges and rivers generally feeds the nutrient levels at the surface of the water, unlike ocean sources. It is also at this surface layer where growth of the microbial food web—driven by sunshine, warmth, and nutrients—

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

explodes on a seasonal basis. Normally the surface layer would be dominated by phytoplankton diatoms that construct themselves with silica. These diatoms, in turn, support a population of copepods that transfer their high-lipid energy to forage fish, such as herring, when consumed.

68. In Puget Sound, however, the increase in surface nitrogen has driven widespread algal blooms of the red-orange dinoflagellate *Noctiluca* that consume the diatoms that are essential to the Sound food web, as well as the copepods themselves. In Puget Sound, the change from a diatom-based surface food web to one based on *Noctiluca* is dramatic. *Noctiluca* are capable of consuming the entire population of diatoms in one day. The end result is both a starving of the benthos as well as a starving of the surface layer. The *Noctiluca* out-competes the copepods for diatoms thus resulting in a lower quality diet for species at higher trophic levels. And it has the effect of retaining the nutrients near the surface.

Figure 2. The Dinoflagellate Noctiluca in Puget Sound (Near Seabeck on Hood Canal) Photo by Don Paulson (2009).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

Figure 3. The dinoflagellate Noctiluca in Puget Sound Seen from the Air (Ecology, Eyes Over Puget Sound Program).

69. Nitrogen pollution in Puget Sound also contributes to local ocean acidification, which impairs the ability of shellfish to build shells.

Figure 4. A Pteropod Shell (Sea Snail) Dissolved Over the Course of 45 Days in Seawater Adjusted to an Ocean Chemistry Projected for the Year 2100. NOAA Environmental Visualization Laboratory.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

70. Moreover, nitrogen pollution in Puget Sound contributes to the large numbers of jellyfish masses that, like *Noctiluca*, are a nutritional dead end in the food web.

Figure 5. Jellyfish in Puget Sound.

71. The waters of Puget Sound and its tributaries are protected by Washington water quality standards that include numeric and narrative criteria as well as designated uses. Some of these water quality standards are intended to protect human use of the waters (e.g., indicator bacteria for human pathogens, toxic criteria that apply to fish tissue). Others are intended to protect sensitive aquatic life uses such as rearing, migration, and spawning of salmon, steelhead, trout, and other aquatic life uses (e.g., temperature, pH, dissolved oxygen, acute and chronic levels of toxics). Designated beneficial uses and narrative criteria are intended to protect such aquatic-dependent uses as wildlife (e.g., birds and mammals) from pollutants for which there are no numeric criteria—such as some toxics, nutrients, and harmful algal blooms. Narrative criteria also protect aesthetic values, such as those harmed by widespread algal blooms, for which there are no numeric criteria.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

72. Washington does not have numeric criteria for nutrient pollution. Nutrient pollution causes, *inter alia,* depletion of dissolved oxygen levels and therefore some of its adverse effects to water quality can be assessed as dissolved oxygen levels. Where excessive nutrients cause algal blooms, Washington must rely on its narrative criteria. The state also does not have numeric criteria for many toxic pollutants, such as so-called contaminants of emerging concern, for which EPA has not issued recommended criteria for states to use under section 304(a) of the CWA. For these pollutants, Washington can rely on its narrative criteria, designated uses, and antidegradation policy.

The Regulatory Status of Puget Sound

Ecology and EPA Have Known for Decades About Puget Sound Impairment Caused by Nutrient Pollution

73. Washington's marine water quality monitoring program for Puget Sound was initiated in 1967. In 1992, Ecology reported that it had shifted its emphasis to nonpoint source pollution but that it was embarking on a new, more comprehensive approach to support the efforts of state and federal agencies, designed to measure, *inter alia*, nutrients, dissolved oxygen, aesthetic conditions, and biological communities affected by nutrient pollution such as chlorophyll and phytoplankton.

74. In subsequent publications on marine monitoring from 1993, 1994, and 1995, Ecology reported dissolved oxygen levels below acceptable levels (3 and 5 mg/L) throughout Puget Sound, noting that these levels—likely linked to nutrient pollution—might result in "a shift in species composition, a decrease in population numbers and species diversity with a resulting decrease in amount and type of biomass, a disruption of usual predator-prey interaction, and a shift in the expected trophic pathways. . . . Because the consequences of eutrophication are large, understanding its potential in local waters is important." Ecology, *Washington State Marine Water Quality in 1994 and 1995* (April 1997) at 59; *see also id*. at 62.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

75. In its report on 1994 and 1995 monitoring results, Ecology identified "severely low DO concentrations in southern Hood Canal," and low dissolved oxygen in central Hood Canal, East Sound, Penn Cove, Budd Inlet, Possession Sound, Elliott Bay, Skagit Bay, Port Susan, and the Saratoga Passage, some of which were described as having dissolved oxygen levels that were "especially severe and approached anoxia [an absence of dissolved oxygen]." *Id*. at 63. Moreover, the report concluded that the location of monitoring stations resulted in a "definite undersampling of locations within Puget Sound." *Id.*

Washington's 2012 Section 303(d) List of Impaired Waters

76. Despite its knowledge that Puget Sound was highly sensitive to nitrogen pollution dating back to at least 1975, by 1996, the South Sound was listed for dissolved oxygen and/or nitrogen impairment in only three waterbodies (Outer and Inner Budd Inlet, and Oakland Bay) and in 1998, Ecology had added Henderson Inlet but removed Oakland Bay, and removed the only portion of Puget Sound listed as impaired for excess nitrogen. These listings were based on data from as early as 1985.

77. By 2004, EPA approved a Washington 303(d) list with 22 segments[5] in South Puget Sound identified as impaired, with another 43 segments identified as "waters of concern."

78. For the entirety of Puget Sound, 17 segments were listed for dissolved oxygen violations in 1996, which grew to 25 segments listed in 1998, 52 segments listed in 2004, and 100 segments listed in 2008. There are currently 141 segments throughout Puget Sound listed for low levels of dissolved oxygen on Washington's 2012 303(d) list. Ecology identifies another 330 Category 2 marine waters segments listed for dissolved oxygen, a category that indicates "waters of concern."

/// /// ///

/// /// ///

/// /// ///

[5] The waters of Puget Sound are assessed by grid cells, equivalent to stream segments, and by individual pollutant or parameter, thus yielding segment-parameter impairments. Each cell is approximately 2,460 by 3,660 feet.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

79. The Washington 2010 303(d) list represents the last time that Ecology or EPA completed an update of the state's list of impaired marine waters. The list is based on data obtained prior to October 15, 2009. EPA approved what it termed the "2010 303(d) list" on December 21, 2012.

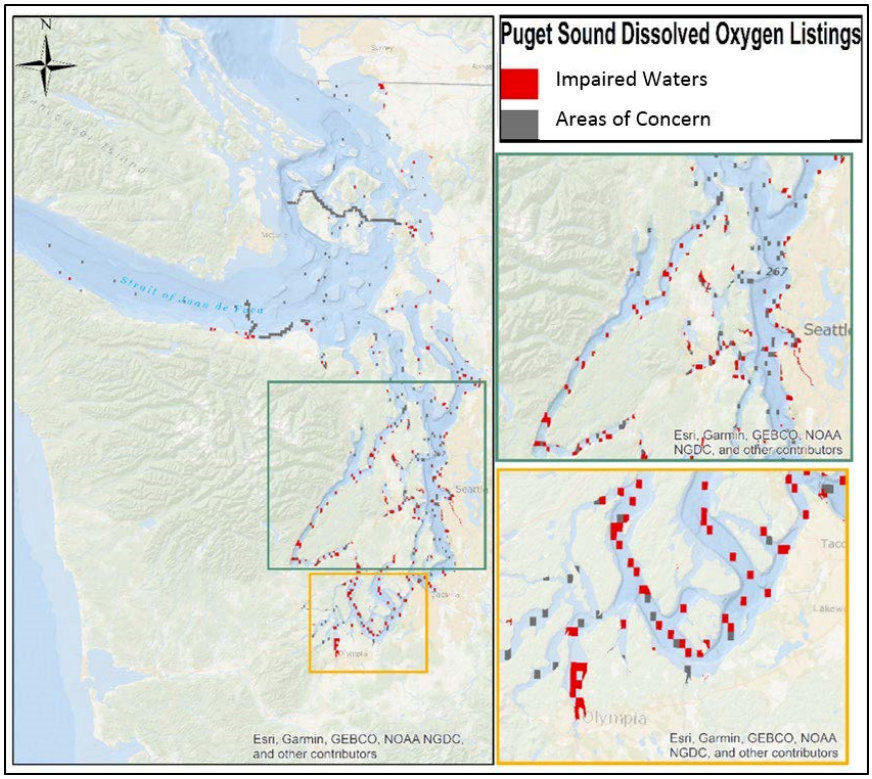

Figure 6. Map of 303(d) Listings of Puget Sound Segments Impaired for Dissolved Oxygen (2010); Ecology, Puget Sound Nutrient Source Reduction Project Volume 1: Model Updates and Bounding Scenarios (January 2019) at 16, fig. 2.

80. The Washington 2012 303(d) list represents the last time that Ecology or EPA completed an update of the state's list of impaired waters. The list is based on data obtained prior to May 1, 2011. EPA approved what it termed the "2012 303(d) list" on July 22, 2016.

81. EPA has never approved an Ecology 303(d) list submission with TMDL priorities.

82. Toxics impairment listings in Puget Sound waters have also increased over time. Based on tissue samples, 32 segments were placed on the 303(d) list in 1996, 44 segments were listed in 1998, 51 were listed in 2004, and 47 were listed in 2008. Now, on its most recent 2012

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

303(d) list, Ecology currently lists 257 segments of Puget Sound marine waters as impaired for toxics in animal tissue.

83. Ecology currently lists 480 segments of Puget Sound marine waters as impaired for toxics in sediment. An additional 1,116 segments are listed as Category 2 waters of concern.

A Much Broader and Increasing Extent of Puget Sound Impairment Is Reflected by Data and Information Not Used for the 2012 Washington 303(d) List of Impaired Waters

84. The waters listed on Washington's 303(d) list tell only half the story of nitrogen impacts to Puget Sound's dissolved oxygen depletion because many impaired segments are not on the list. In 2014, Ecology found that:

> current human nutrient loads to South and Central Puget Sound (both internal and external to model domain) cause >0.2 mg/L decreases in daily minimum oxygen concentrations in portions of Totten, Eld, Budd, Carr, and Case inlets of South Puget Sound (Figure ES-3a). We also found violations in East Passage in Central Puget Sound.
>
> * * *
>
> If marine point sources (internal to model domain) discharged at their maximum permitted loads every day of the year, maximum loads would cause >0.2 mg/L depletions in more regions of the South Sound inlets and in a large portion of Central Puget Sound.

Ecology, *South Puget Sound Dissolved Oxygen Study: Water Quality Model Calibration and Scenarios* (March 2014) at 16–19 (hereinafter "2014 Scenarios").

85. As of February 2019, Ecology reports that its modeling studies show that approximately 20 percent of Puget Sound currently violates water quality standards for dissolved oxygen. *See* Ecology, *Puget Sound Nutrient Source Reduction Project Volume 1: Model Updates and Bounding Scenarios* (January 2019) (hereinafter "2019 Bounding Scenarios"). According to Ecology, this reflects a total of 1,258 Puget Sound cells or 303(d) assessment units that violate dissolved oxygen standards for which TMDLs are required. These data and information are not reflected in the 2010 or 2012 303(d) lists.

86. The 20 percent of Puget Sound that is not meeting dissolved oxygen standards manifests in both the number of noncompliant days and maximum oxygen depletion as well as the spatial extent of the impairment. For example, the model demonstrated that:

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

> Portions of Puget Sound, primarily in South Sound and Whidbey Basin, experience a large number of days per year when the marine DO standards are not met. The number of noncompliant days varies by year and location. For instance, the maximum number of noncompliant days occurred in 2006 (Carr Inlet, 250 days), followed by 2008 (Carr Inlet, 216 days), and 2014 (Quartermaster Harbor, 198 days). The average cumulative number of noncompliant days computed over all areas not meeting the standard was 63, 50, and 46 in each of those years, respectively.

2019 Bounding Scenarios at 13.

87. Ecology also reported that in 2006, hypoxic levels—"very low oxygen regions [below 2 mg/L] . . . with well-documented consequences for aquatic life"—peaked around 52,500 acres, approximately 19 percent of which was attributable to human nutrient loading. *Id.* at 78. The model also showed that the hypoxic volume for 2006, 2008, and 2014 was between 28 and 35 percent higher than pre-industrial conditions. The Bounding Scenarios report also found that "[t]he locations most impacted consist of poorly flushed inlets and bays, such as Penn Cove; Quartermaster Harbor; Case, Carr, Budd, Sinclair, and Dyes Inlets; and Liberty Bay." *Id.* at 83.

88. Upon information and belief, Washington's 303(d) list does not include waters predicted by the model to violate water quality standards for dissolved oxygen.

89. Also, Washington's 303(d) list represents only a fraction of the Sound's waters with toxic impairment. For example, a single assessment cell in Central Puget Sound represents an entire body of evidence pertaining to toxic contamination in the tissue of harbor seal pups (three listings for total dioxin, total furans, and PCBs) and killer whales (for dioxin), limited to that single assessment cell because the "[l]ocation is based on best estimate of where the tissue samples were taken for the study." Ecology, *Washington State Water Quality Assessment, 303(d)/305(b) List*, Listing 36166, Assessment Unit ID 47122F4I4.[6] This assessment cell constitutes 0.836 square kilometers of Puget Sound waters.

90. No waters are on the 303(d) list based on levels of contaminants of concern despite ongoing monitoring and research on their loading and toxic effects in Puget Sound. For

[6] Available at https://apps.ecology.wa.gov/approvedwqa/approvedpages/viewapprovedlisting.aspx?LISTING_ID=36166; Map link available at https://apps.ecology.wa.gov/waterqualityatlas/wqa/map?lstid=36166 (last accessed December 3, 2021).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

example, in a paper issued recently, Ecology found that:

> Recent research on CECs in wastewater has demonstrated biological impacts such as: negative metabolic changes in Chinook salmon (Meador et al., 2016), endocrine disruption in multiple fish species (Brodin et al., 2014; Harding et al., 2006), reduced fertility in fathead minnows (Niemuth & Klaper, 2015), increased antibiotic resistant bacteria, general increased morbidity in Coho and Chinook salmon (Meador, 2014), and bioaccumulation in annelids (Kinney et al., 2015).

Ecology, *Contaminants of Emerging Concern and Wastewater Treatment* (June 2021) at 12. Some of these studies are on Puget Sound and Puget Sound species.

91. However, the Puget Sound Partnership's 2021 assessment of marine water quality reports that the "Marine Water Condition Index" is "getting worse," the status of dissolved oxygen in marine waters is "Below 2020 Target," and the decline is "noteworthy in Bellingham Bay, Whidbey Basin, and further north in the Georgia Basin, Canada. Dissolved oxygen levels in many parts of Puget Sound were lower on average in 2019 compared to the baseline (1999–2008) conditions, continuing a six-year declining oxygen trend." Puget Sound Partnership, *State of the Sound Report 2021* (2021) at 19–20. In addition, the health of benthic communities is "especially degraded in areas . . . low in oxygen." *Id*. at 20. Ocean acidification, which is related to nitrogen pollution, "is a continuing problem." *Id*.

92. The Partnership's 2021 evaluation of toxic contaminants in four species of fish indicate all are "Below 2020 Target" and either have no or insufficient data (adults and juvenile Chinook) or "mixed results" (English sole and Pacific herring). *Id.* at 19. "Thousands of chemicals, known as contaminants of emerging concern, might harm Puget Sound aquatic species but are less well known. Governments do not regulate their levels." *Id*. at 20.

93. Although Ecology does not place any waters on its 303(d) list solely for failure to support designated uses, the Partnership reports the status of Chinook salmon is "Not Improving," the biomass of spawning Pacific herring is "Getting Worse," and the population of endangered Southern Resident killer whales is "Getting Worse." All three species are listed as "Below 2020 Target." *Id*. at 29.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

94. In addition to monitoring nutrient impacts to dissolved oxygen, Washington has been monitoring the status of marine benthic communities—bottom dwelling parts of the food web—for three decades. Ecology has not placed any segments on its 303(d) list on the basis of these data and information. Yet, in 2017, Ecology demonstrated that the benthos has been declining from baseline conditions (1997–2003) to "resample" conditions (2004–2014). *See* Weakland *et al*., *Regional Declines in Puget Sound Benthic Communities* (July 2017) at 5. In five types of habitats across Puget Sound, the number of organisms has declined; and in four of those five habitat types, the number of species has declined. The number of sampling sites considered adversely affected changed from 35 percent to 44 percent. The study also demonstrated an increase in pollution/hypoxia tolerant species and concluded that "Model Predictions of Low DO Correspond with Affected Communities." *Id*. at 15.

95. Upon information and belief, Washington's 303(d) list does not include waters where data and information demonstrate that water quality standards are violated because of nitrogen-caused impairments to the Puget Sound food web, benthos, or species.

Ecology Began Working on TMDLs for Dissolved Oxygen Depletion Caused by Nitrogen in South Puget Sound and Puget Sound and Has Abandoned Them

96. Models are developed to assist in the establishment of TMDLs, particularly for waters that are polluted by a combination of point and nonpoint sources, and for waters with complex considerations of the transport, fate, and effects of pollutants.

Ecology Developed a Model for Nitrogen Impacts to Depleted Dissolved Oxygen in South Puget Sound in 2001

97. Ecology, with EPA funding and technical assistance, has been studying and modeling the impacts of nitrogen and other influences on Puget Sound for many years. By 2001, Ecology had concluded that "many sites in South Puget Sound would be sensitive to nutrient addition or eutrophication [high concentrations of nutrients]." Ecology, *Assessing Sensitivity to Eutrophication of the Southern Puget Sound Basin* (2001). Model development began with South

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

Puget Sound in 2001 in response to many studies, from as early as 1975, that had "previously concluded that South Puget Sound is susceptible to water quality problems due to reduced circulation . . . and shows signs of nutrient sensitivity." Ecology, *South Puget Sound Water Quality Study: Phase I* (October 2002) at vii, ix (hereinafter "2002 Phase I Study").

98. In 2002, the first report on the model "found that South Puget Sound is sensitive to nutrient addition, confirming the potential for serious water quality degradation due to increased nutrient loads," and concluding that "[b]oth point and nonpoint sources contribute significantly" to a situation that "urgently deserves further attention and quantitative assessment." *Id*. at vii, ix.

99. An interim report issued in 2008 concluded that, taking the South and Central Puget Sound together, sewage treatment plants contributed roughly 80 percent of anthropogenic nitrogen on an annual basis and 92 percent in the fall. Even so, in some inlets of Puget Sound, the input of rivers dominated the annual loading. This 2008 report also found that:

> Low levels of DO occurred throughout South Puget Sound near-bottom waters (Figure ES-6). Concentrations below the water quality standards were recorded in Budd, Carr, Case, and Henderson Inlets; Pickering Passage; Dana Passage; and the Nisqually Reach. Central Puget Sound and the Tacoma Narrows also exhibited low near-bottom DO in summer 2007. Lowest levels occurred in southern Budd Inlet, but levels near or below 5 mg/L occurred in Case and Carr Inlets as well as through the Tacoma Narrows in September 2006. Low levels persisted until December 2006 and returned again in June 2007.

Ecology, *South Puget Sound Dissolved Oxygen Study: Interim Data Report* (December 2008) at 19.

100. Three years later, in 2011, Ecology issued another report, confirming that sewage treatment plants are the dominant human source of nitrogen pollution to Puget Sound. This report concluded that "current loads from rivers and streams are 2.2 times higher than natural conditions for South Puget Sound, 1.5 times higher for Central Puget Sound, and 1.8 times higher overall. When we include WWTPs [sewage treatment plants], current loads are 3.4 times higher than natural conditions for South Puget Sound, 7.7 times higher for Central Puget Sound,

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

and 6.1 times higher overall." Ecology, *South Puget Sound Dissolved Oxygen Study Interim Nutrient Load Summary for 2006-2007* (January 2011) at 58. The report concluded that sewage treatment plants produce 71 percent of annual anthropogenic nitrogen loads in Puget Sound and rivers produce 29 percent.

101. Finally, in 2014, yet another report on dissolved oxygen in South Puget Sound was described as a "study to evaluate the impact of humans on DO concentrations within South and Central Puget Sound, which fall below the numeric criteria in the water quality standards." 2014 Scenarios at 9. The report concluded that "current [2007 South Puget Sound] human nutrient loads from marine point sources and watersheds as well as external (north of model domain [Edmonds]) current anthropogenic loads are causing DO to decline by as much as 0.4 mg/L in portions of Totten, Eld, Budd, Carr, and Case Inlets, and East Passage, which violates the standards[.]" *Id.*

102. The 2014 report stated that the South Puget Sound model demonstrated that a reduction of 75 percent of all human sources in South and Central Puget Sound would "eliminate all violations except in Eld Inlet[.]" *Id*. at 18. It concluded that Central Puget Sound sources of nitrogen "potentially contribute 30 to 40% of the DO depletions in Carr and Case Inlets." *Id*. at 131. Ecology concluded that "[a]dditional scenarios should be combined into potential sets of management actions to support the future development of load and wasteload allocations if a TMDL is pursued. Ecology may not conduct a TMDL if alternative management approaches are used to address violations." *Id*. at 22.

103. The South Puget Sound model has since been incorporated into the modeling of the larger geographic area of Puget Sound and the Salish Sea where it provides a "more detailed comparison to the standards." Ecology, *Quality Assurance Project Plan Salish Sea Dissolved Oxygen Modeling Approach: Sediment-Water Interactions* (January 2015) at 10.

/// /// ///

/// /// ///

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

Ecology Developed a Model for Nitrogen Impacts to Depleted Dissolved Oxygen in the Entire Puget Sound in 2008

104. In 2008, EPA, Ecology, and other agencies began developing models of the entire Puget Sound in response to studies from 1999, 2002, 2005, 2006, and 2007, showing that eutrophication was present in Puget Sound and expected to worsen. A plan for the development of an "intermediate-scale" model was undertaken in 2009 "[a]s part of mandates under the Federal Clean Water Act to manage pollutant loading to meet water quality standards, [by] EPA, Pacific Northwest National Laboratory (PNNL), and Ecology" to address "nutrient management questions" because "[n]utrient pollution . . . [is] considered one of the largest threats to Puget Sound[.]" Ecology, *Quality Assurance Project Plan: Puget Sound Dissolved Oxygen Modeling Study: Intermediate-scale Model Development* (April 2009) at 5, 7 (hereinafter "2009 QAPP"). Specifically, the project would help to determine "what level of nutrient reductions are necessary to reduce or eliminate human impacts to dissolved oxygen levels in sensitive areas." *Id*. at 4.

105. In 2011, Ecology published its first report on the Puget Sound model, demonstrating that sewage treatment plants are the dominant human source of nitrogen pollution to Puget Sound by contributing 81 percent of the nitrogen loads in the summer and 59 percent on an annual basis. These loading estimates were to be plugged into the model. This report confirmed the results of five other studies that evaluated nutrient load estimates from 1997, 1998, 2006, 2009, and 2011, concluding that "[o]verall [the] results were comparable." Ecology, *Puget Sound Dissolved Oxygen Model: Nutrient Load Summary for 1999-2008* (November 2011), at xxii.

106. Also in 2011, the plan for development and use of the model was amended to "evaluate the effects of current and potential future nutrient loads on DO levels in Puget Sound" and "define potential Puget Sound-wide nutrient management strategies and decisions" because "there has been considerable concern over the assimilative capacity of Puget Sound and ability to withstand continued human population growth." Ecology, *Addendum 1 to Quality Assurance Project Plan: Puget Sound Dissolved Oxygen Study: Intermediate-scale Model Development*

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

(October 2011) at 6. It outlined steps to "develop the model to a state of robustness and readiness of a 'Water Quality Management Tool' for use by EPA and Ecology[.]" *Id*. at 7.

107. A paper on the model results was published by the authors in 2012 that concluded: "the model reproduces overall seasonal algal bloom dynamics and DO levels in Puget Sound resulting from exchanges with the Pacific Ocean and nutrient loads from natural and human sources within the basin." Tarang Khangaonkar, *et al., Simulation of annual biogeochemical cycles of nutrient balance, phytoplankton bloom(s), and DO in Puget Sound using an unstructured grid model* Ocean Dynamics (2012) 62:1353, 1373.

108. But not until 2014 did the agencies publish a report predicting the impact of these human nitrogen contributions on dissolved oxygen depletion in Puget Sound. This 2014 report assessed the "current" 2006 conditions as well as future conditions in 2020, 2040, and 2070, both with and without the effects of climate change. Ecology, *Puget Sound and the Straits Dissolved Oxygen Assessment Impacts of Current and Future Human Nitrogen Sources and Climate Change through 2070* (March 2014) at 117 (hereinafter "Future Conditions Report"). The report predicted significantly worsening conditions and recommended yet further studies.

109. To these results, in the years from 2014 to 2017, were added an improved understanding of sediment-water exchanges and predicting acidification impacts of nitrogen pollution in Puget Sound. Since 2017, the agencies have used the model to demonstrate that if all sewage treatment plants were required to install only very modest nitrogen removal—far less than the capacity of current technology—those sources would continue to cause and contribute to violations of water quality standards in Puget Sound.

Ecology Began and Then Abandoned the Development of TMDLs for Puget Sound and South Puget Sound Waters

110. In PPAs signed in 1997 and again in 1998, EPA and Ecology agreed to "[c]onvene an interagency group to develop options for measuring/evaluating loadings of toxic and conventional pollutants to Puget Sound or parts of Puget Sound." The regulatory purpose of

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

developing loadings of pollutants is to establish TMDLs from which load limits are then allocated to point and nonpoint sources.

111. EPA and Ecology were well aware that "[m]any studies have previously concluded that South Puget Sound is susceptible to water quality problems due to reduced circulation . . . and shows signs of nutrient sensitivity," based on studies from 1975 through 1997, when they embarked on a two-phase study to evaluate and model nitrogen pollution loads and resulting dissolved oxygen levels in South Puget Sound in order to prepare TMDLs. 2002 Phase I Study at x. Funding was provided by both agencies in 1998.

112. The 2002 Phase I study of South Puget Sound "confirm[ed] the potential for serious water quality degradation due to increased nutrient loads," *id*. at vii, found that "dissolved oxygen is more sensitive to nutrient-driven processes than direct biochemical oxygen demand (BOD) loading [used for NPDES permits]," *id*. at xv, identified NPDES point sources as the primary contributor of nitrogen, and asserted that Phase 2 of the South Puget Sound model "[u]ltimately . . . will establish load and wasteload allocations based on the TMDL for South Puget Sound," *id*. at xi.

113. Despite the urgency it asserted, Ecology did not pursue Phase 2 of the TMDL study, until August 2007, when it issued a plan for "a critical first step in determining what might need to be done to improve Puget Sound water quality." Ecology, *South Puget Sound Water Quality Study Phase 2: Dissolved Oxygen, Quality Assurance Project Plan* (August 2007) at 10. Asserting that "We Must Solve the Problem Before it Gets Worse," *id*. at 11, Ecology cited "about $200 million worth of [sewage treatment plant] investments being planned, designed, or constructed right now in South Puget Sound," *id*. at 15, noting that the population in the area is expected to increase significantly and that "[e]very additional person in the region produces about ten pounds of additional nitrogen every year . . . much of that nitrogen makes its way to Puget Sound," *Id*. The study plan also noted that "once nitrogen is discharged to Puget Sound, it moves around—nitrogen discharged at one location may cause low dissolved oxygen levels

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

many miles away." *Id*. at 11. The plan also cited the first known outbreak of harmful algal blooms in Puget Sound in 1997 and the growing number of paralytic shellfish poisoning events.

114. In 2006, EPA critiqued the Partnership's discussion of modeling the transportation of nitrogen in Puget Sound because it made no mention of needed TMDLs, "that would include all the necessary source assessments, fate and transport analysis, and long range goals for point and non-point sources of pollution."

115. In a Puget Sound work plan for fiscal year 2008, EPA discussed developing "nutrient management plans for TMDLs, [and] NPDES permits," and nonpoint sources, as well as completing the Capitol Lake and Budd Inlet dissolved oxygen TMDLs. EPA, *6. Tasks, Products, and Environmental Outcomes* (2008). Environmental results and outcomes for South Puget Sound, Budd Inlet, and Hood Canal were identified to include "Quantification of Nutrient Reduction targets or attainment of D.O. conditions." *Id*. For the whole of Puget Sound, this work plan called for nutrient modeling to result in: "Publish Recommendation for Action (e.g., TMDL, AKART, nonpoint actions)." *Id.* By March 2008, Ecology represented to EPA that its model would be used to develop nitrogen TMDLs for the South Puget Sound with results completed by June 2010, while developing a study plan for the next set of Puget Sound basin TMDLs, which would possibly be Whidbey Basin. Ecology, *DRAFT Proposal for Puget Sound Nutrient Monitoring* (March 7, 2008) at 3–4.

116. In October 2007, EPA identified South Puget Sound dissolved oxygen as new TMDLs that were slated for a Summer 2010 submittal from Ecology to EPA. In a December 2007 PPA status report, under the category "TMDLs," the agencies wrote: "EPA will help seek additional funds for Ecology's South Puget Sound Study to determine how nitrogen from a variety of sources affects dissolved oxygen levels in South Puget Sound." EPA, Ecology, *WA State Performance Partnership Agreement, July 2007-June 2009, Water Quality Program Status Report (As of December 31, 2007)* at 10. In a subsequent PPA status report, the agencies made

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

clear that the studies and modeling of nitrogen's effect on dissolved oxygen in Puget Sound were to result in TMDLs:

> Revised Activity description: *EPA will continue to support Ecology's ongoing effort to conduct a water quality evaluation and develop a water quality modeling tool for South Puget Sound waters. Excessive amounts of nutrients from a variety of sources affect dissolved oxygen levels in South Puget Sound waters. When completed, the modeling tool is expected to support development of a TMDL for the sources of nutrient loading.*
> The state has received the funding for this project. As resources allow, EPA will continue to provide technical and financial assistance to complete this study and the model.

EPA, *WA State Performance Partnership Agreement July 2007-June 2009, Water Quality Program Status Report As of June 30, 2008 (EPA Responses November 2008)* (November 2008) (emphasis original) at 14. Repeated PPA status reports from June 2009 through September 2012 discuss EPA's assistance with Ecology's South Puget Sound Dissolved Oxygen Study under the category "TMDLs."

117. In 2009, seeking funding, Ecology wrote to EPA that its model and studies of dissolved oxygen in South Puget Sound "are being developed to provide the technical basis of a TMDL if human contributions cause violations of the State water quality standards. If load reductions are necessary, [the water quality program] WQP would lead a TMDL or other process to quantify who reduces what, where, when, and how much." Ecology, *-DRAFT- Dissolved Oxygen/Nutrient Strategy in Puget Sound* (January 27, 2009) at 1. The state cited a study on costs associated with treatment technology to remove nutrients from sewage treatment plants for which funding was sought as assisting in "implementing TMDLs" and identified Fall 2010 as the decision point to decide "how do we proceed Sound-wide? TMDL route? Technology route? Both? Other?" *Id*. at 3.

118. The 2009 plan for modeling the entire Puget Sound was stated to respond to CWA mandates and considered "essential for future applications in Puget Sound such as Total

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

Maximum Daily Load (TMDL) calculations or sediment impact zone (SIZ) assessment for remedial investigations." 2009 QAPP at 14.

119. In the March 2010 PPA status report, EPA and Ecology reported that they discussed Washington's statewide nutrient management plan, which:

> focuses on implementation of programs and TMDLs to reduce dissolved oxygen, pH and temperature, which impact the ability for nutrients to grow. The plan was well received by EPA, who gave suggestions for improving upon the results of the plan by looking at information that may provide trends towards improving water quality as a result of these efforts. Ecology is also leading the South Sound Nutrient study (supported by PSP and funded by EPA) which focuses on dissolved oxygen, by determining what amount of nitrogen loading can be permitted to meet acceptable DO levels.

A draft description of the South Puget Sound Dissolved Oxygen Study in May 2010 noted that the study area "includes Central Puget Sound (which contains the largest wastewater dischargers in the state) to determine if these dischargers contribute to the water quality problems in the South Sound." EPA/Ecology, *South Puget Sound Dissolved Oxygen Study DRAFT Version: May 4, 2010*. The agencies identified the need for an "interim permit strategy" for permits that need to be renewed before study completion, with "[d]etailed what-if scenarios" expected to be completed by 2012. *Id*. at 1.

120. By 2011, the agencies were suggesting that the extensive studies and modeling of dissolved oxygen in Puget Sound and South Puget Sound might be used as a non-regulatory alternative to TMDLs. EPA and Ecology described their joint efforts on South Puget Sound, Hood Canal, and possibly other areas of Puget Sound with known dissolved oxygen problems, as "TMDL[s] (or other management plan)." EPA, *Puget Sound Toxics and Nutrients projects* (January 7, 2011) at 2.

121. In April 2012, EPA wrote in response to public comments about the permit it proposed to issue for the Fort Lewis sewage treatment plant that nutrient monitoring of the facility's discharge was called for because:

> Washington State's Puget Sound is a priority watershed for EPA, and as such it has been the site of a number of EPA-funded research activities such as Ecology's

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

> South Puget Sound Dissolved Oxygen Study (which was partially funded by a grant from EPA's National Estuary Program). The need for this study became evident when, in their 2008 Water Quality Assessment, Ecology found 24 locations in South Puget Sound that were impaired due to a lack of dissolved oxygen. The South Puget Sound Dissolved Oxygen Study evaluated a number of different sources for nitrogen, as nitrogen is the main pollutant responsible for low dissolved oxygen levels in this environment. The study included Solo Point as one of 29 municipal wastewater treatment plants that discharge nitrogen into South Puget Sound. The early findings of the study include the following: "On an annual basis, rivers and wastewater treatment plants south of the Tacoma Narrows sent roughly equal amounts of nitrogen into the South Sound. However, in September 2007 – a critical period for dissolved oxygen concentrations – wastewater treatment plants south of the Tacoma Narrows contributed four times more nitrogen to South Puget Sound than the rivers. In looking at the entire study area, which reaches to just south of Edmonds, wastewater treatment plants contributed more than ten times more nitrogen than the rivers."

EPA, *Response to Comments Fort Lewis NPDES Permit No. WA-0021954* (April 2012) at 4. EPA went on to explain that the monitoring required by the permit was needed "in order to inform future studies that may ultimately lead to a water quality-based effluent limit (WQBEL) or Total Maximum Daily Load (TMDL) if necessary to protect this vital waterway [of South Puget Sound]." *Id*.

122. That same year, the EPA staffer assigned to the Puget Sound nitrogen TMDLs noted that "EPA will likely need to push the state on what could be the most important TMDL yet undertaken in WA, it would certainly be a plus for Puget Sound." EPA, *Ongoing work assigned to David Ragsdale* (May 20, 2013).

123. A March 2014 study by Ecology for South Puget Sound noted that model runs of different scenarios "should be combined into potential set of management actions to support the future development of load and wasteload allocations if a TMDL is pursued" but that "Ecology may decide to not conduct a TMDL if alternative management approaches are used to address violations." 2014 Scenarios at 135.

124. Even so, in 2016, Ecology prepared a detailed memorandum to share with EPA concerning the overlapping dissolved oxygen TMDLs for Budd Inlet and Puget Sound that demonstrated no doubt that the result of the modeling would be TMDLs. Ecology saw two choices, one of which was to "[d]evelop separate Budd Inlet and Puget Sound DO TMDLs" and

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

the other of which was to "[c]ombine Budd Inlet TMDL into Puget Sound DO TMDL." Ecology, *Two options for approach to Budd Inlet* and Puget Sound DO TMDLs* (October 2016). Moreover, Ecology captured EPA's previously-expressed position that if the Budd Inlet TMDLs were completed first, to be approvable by EPA, Ecology would have to have a schedule for completing the Puget Sound TMDLs because protection of Budd Inlet will require significant load reductions from point sources in the greater Puget Sound. *See id*.

125. However, by 2017, Ecology was again alluding to developing a "TMDL or TMDL equivalent." Ecology, *Options for ensuring WQS for downstream water–Budd Inlet TMDL* (February 8, 2017). Later that year, Ecology classified its position on whether it would develop nitrogen TMDLs for Puget Sound as "agnostic," and stated that:

> [I]t would be wise to wait until we have a better understanding of our options for nutrient source reduction before we decide to formally call this a TMDL effort or an alternative to a TMDL. One of the primary objectives on which to base this decision is timely implementation of the solutions that are needed for Puget Sound water quality improvement, and we should decide on an implementation pathway that best fulfills this objective.

Ecology, *FY2019 WQP/EAP Project Planning, Final Puget Sound Nutrient Source Reduction Project EAP Extended Scoping Form* (October 13, 2017) (hereinafter "2017 Scoping") at 3, 6.

126. Likewise, in the next PPA, signed in June 2017, the agencies no longer described the work to address over-enrichment of nutrients in Puget Sound as TMDLs, merely noting that "[b]oth agencies are mindful of large-scale nutrient problems in other estuaries around the country (e.g., Chesapeake Bay, Gulf of Mexico, and Long Island Sound). We are monitoring sensitive areas in Puget Sound and building models to help identify how excess nutrients affect Puget Sound. This will enable us to address nutrient problems before they become catastrophes." EPA/Ecology, *Environmental Performance Partnership Agreement Washington State Department of Ecology U.S. Environmental Protection Agency State Fiscal Years 2018–2019, July 1, 2017–June 30, 2019* (June 27, 2017). And, in January 2017, after hearing from Ecology

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

that it was "still kicking around . . . whether it will be a TMDL or TMDL alternative," EPA acknowledged that "the effort may result in the development of a TMDL." Email from Laurie Mann, EPA, to Dustin Bilhimer, Ecology, Re: *EPA lead on Puget Sound DO* (January 11, 2017).

127. On October 10, 2017, NWEA petitioned Ecology for development of TMDLs for nitrogen in Puget Sound. By letter dated December 8, 2017, Ecology denied the petition agreeing that Puget Sound is impaired by nutrient pollution and asserting that a "TMDL may be necessary."

128. Planning the use of the model for determining what steps to take, in June 2018, Ecology issued a plan for its next phase of using the Puget Sound model to "guide regional investments in point and nonpoint source nutrient controls so that Puget Sound will meet DO water quality criteria and aquatic life designated uses by 2040." The plan specifically included the goal of "[p]rovid[ing] a technical basis for exercising National Pollutant Discharge Elimination System (NPDES) authority for nutrient water quality-based effluent limits." Ecology, *Quality Assurance Project Plan Salish Sea Model Applications* (June 2018) at 8.

129. On or before July 30, 2018, Ecology made an internal determination that it would pursue a "TMDL Alternative" in lieu of EPA-approved TMDLs because it gives the state more "flexibility." Ecology, *Draft Nutrient Source Reduction Charter, Version 1.5* (July 30, 2018) at 7. In describing its decision-making process, Ecology itself identified an important risk associated with this "alternative" approach: "If a decision is made to not develop a TMDL, it is unclear how we use our NPDES permit authority to require dischargers to invest in advanced treatment to meet new effluent limits that do not have the force of a wasteload allocation." *Id*. at 18.

130. In November 2018, NWEA petitioned Ecology to update its technology-based rules for sewage treatment plants based on Washington State law. In its 2019 denial of that petition, Ecology asserted that it "believes a water quality-based approach is necessary to address dissolved oxygen impairments caused by excess nutrient loading to Puget Sound and its

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

tributaries" and that "water quality-based effluent limits are set at the levels necessary to ensure that a discharger does not cause or contribute to a violation of water quality standards." Letter from Maia D. Bellon, Director, Ecology, to Nina Bell, Executive Director, NWEA, Re: *Petition for Rulemaking to Adopt a Presumptive Definition of "All Known, Available, and Reasonable Treatment" as Tertiary Treatment for Municipal Sewage Dischargers to Puget Sound and its Tributaries* (January 11, 2019). However, on June 16, 2021, Ecology issued a draft permit to cover 58 municipal dischargers of nitrogen to Puget Sound that lacks numeric water quality-based effluent limitations that are necessary to ensure compliance with water quality standards. *See* Ecology, *Draft Fact Sheet for the State of Washington Puget Sound Nutrient General Permit* (June 16, 2021) at 34 ("Numeric limits remain infeasible because modeling is not yet complete.").

131. Finally, on June 20, 2019, EPA approved Ecology's decision to not issue Puget Sound TMDLs. In the PPA signed that day, EPA and Ecology agreed that Ecology will: "execut[e] the Puget Sound Nutrient Source Reduction Project with the goal of using the Salish Sea model and focused stakeholder engagement to develop a TMDL alternative for dissolved oxygen in the Sound." 2019–2021 PPA at 33. The 2019–2021 PPA states that "modeling [] will culminate in a portfolio of point and nonpoint nutrient source reduction actions that we are confident will improve marine water quality. These actions will be documented in a Puget Sound Nutrient Management Plan that will inform Ecology's regulatory and non-regulatory implementation actions, similar to a TMDL." *Id.* at 34.

132. In January 2020, Ecology announced to the public its plans to issue a draft Puget Sound Nutrient Management Plan by Fall 2022 as a "TMDL Alternative," further publicly affirming its decision to not develop TMDLs for nitrogen loading and dissolved oxygen depletion in Puget Sound. Ecology, *Puget Sound Nutrient Forum* (January 30, 2020) at 3.

133. In May 2020, Ecology decided on various nutrient reduction scenarios to run in the Puget Sound model to inform the development of the "TMDL Alternative." It chose five

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

permutations, three of which rely on "high implementation" of nonpoint source controls, a level it stated "represents an extremely optimistic (based on studies of reductions in other coastal estuaries) level of effort and equates to a 40% reduction of [total nitrogen] TN loads." Ecology, *Draft Summary of Scenario 5 anthropogenic nutrient load inputs for Salish Sea Model* (May 2020) at 3.

134. In June 2020, Ecology released preliminary results of modeling the year 2006 as "existing conditions." These results show that year-round use of a moderate level of nitrogen control—much less than the limits of technology—at all sewage treatment plants will reduce 2006 levels of impairment in Puget Sound from 484 square kilometers (17.0 percent) to 208 square kilometers (7.3 percent) and reduce the 2006 average number of days of noncompliance from 67 days to 21 days. Reducing nitrogen only from large facilities or only during the summer season results in less benefit to Puget Sound. *See* Ecology, *PSNGP AC Preliminary Findings, Background material for discussion* (June 2, 2020).

135. In August 2020, Ecology set out a "current timeline" to complete and report on "optimization scenarios modeling" by the end of 2022 and to issue the draft "TMDL Alternative" that year; to issue the final "TMDL Alternative" in 2023, and to conduct "further modeling to support permit development" in the years 2023-2025." Ecology, *Puget Sound Nutrient Source Reduction Project Update Puget Sound Nutrient Forum Meeting* (August 11, 2020) at 5. This timeline indicates that the "TMDL Alternative" may not even include informal "wasteload allocations" for individual permittees.

136. In October 2020, EPA confirmed its June 20, 2019 approval of Ecology's decision to not complete TMDLs for Puget Sound. EPA advised Ecology that "[t]he federal caucus strongly supports the development of a comprehensive nutrient reduction plan for point and non-point sources" and "strongly supports Ecology finalizing its model within the next 2-3 years to establish numeric WQBELs in the next [general nitrogen] permit." Ecology, *Excel spreadsheet, Final Recommendations AC Comments* (October 15, 2020).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

137. EPA reaffirmed its June 20, 2019 approval of Ecology's issuing a "TMDL Alternative" for Puget Sound on June 21, 2021. *See* 2021–2023 PPA at 37, 38.

138. On September 9, 2021, Ecology issued its *Technical Memorandum: Puget Sound Nutrient Source Reduction Project Phase II - Optimization Scenarios (Year 1)* ("2021 Tech Memo"), representing another year of running the model. The 2021 Tech Memo drew a number of conclusions: (1) "The clearest pathway to predicted DO compliance includes comprehensive spatially and temporally distributed reductions from both WWTPs and watersheds"; (2) year-round nitrogen removal from sewage treatment facilities would result in better water quality outcomes than seasonal removal; (3) controlling nitrogen discharges from Main Basin sewage treatment facilities "had the greatest impact in reducing predicted noncompliant total cumulative days and areas (around 80%, and 63% respectively) in WA waters"; and (4) "Future year (2040) growth projections will present further DO compliance challenges." *Id*. at 44–45.

139. The 2021 Tech Memo recommended more model runs.

Lack of a Puget Sound TMDL Results in a Failure to Regulate Discharges of Nitrogen and Toxics as Required by the Clean Water Act

140. NPDES permits for sources that discharge to Puget Sound have long been considered state priorities by EPA and Ecology. In the 2007–2009 PPA, EPA designated Puget Sound permits and those in areas covered by EPA-approved TMDLs as "high priority" for the permits issued by EPA. 2007–2009 PPA at 63. They have consistently remained so through the PPA between the agencies covering the period 2019–2021. Additionally, EPA has committed to seek "additional funds for Ecology's effort to estimate toxics loading from point sources to Puget Sound" in multiple PPA-related documents from November 2008 through 2015, in order "to develop a more robust toxics control strategy for Puget Sound." EPA/Ecology, *Environmental Performance Partnership Agreement for July 1, 2009 - June 30, 2011* (July 10, 2009) at 16, 57.

141. Notwithstanding the EPA and Ecology emphasis on identifying loads of toxic pollution from NPDES-permitted sources, with the exception of ammonia and chlorine toxicity,

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

only six of 95 Ecology-issued NPDES permits for sewage treatment plants discharging to Puget Sound and its tributaries contain limits on toxics.[7]

142. Notwithstanding the agencies' emphasis on identifying needed load reductions of nitrogen, and the identification of sewage treatment plants as the primary source of anthropogenic nitrogen in Puget Sound, only seven[8] of 95 permits issued by Ecology and zero of 11 permits issued by EPA for sewage treatment plants, establish water quality-based limits on nitrogen discharges to Puget Sound and its tributaries. None of the effluent limits for the seven NPDES permits with nitrogen limits is designed to protect the waters of Puget Sound. With the exception of the LOTT permit, which discharges to Budd Inlet, the remainder of these nitrogen limits were triggered by the completion of three freshwater TMDLs: for the Snoqualmie River in 1994, the Puyallup River in 1994, and the Snohomish River Estuary in 1999—all over 20 years ago—none of which was designed to protect the downstream waters of Puget Sound.

143. Ecology has explicitly cited to future, unscheduled Puget Sound TMDLs as a rationale for not including required water quality-based effluent limits for nitrogen in existing NPDES permits. For example, for the King County Renton South discharge, Ecology stated that it "included additional nutrient monitoring in the proposed permit. Ecology will use this data if a TMDL is developed for dissolved oxygen; such a TMDL will likely establish waste load allocations for nutrients." Ecology, *Fact Sheet for NPDES Permit WA0029581 King County South Wastewater Treatment Plant* (July 1, 2015) at 39. For the Sound's largest single discharger, Ecology cites incomplete nitrogen studies predicted to be completed in several years that it says "may impact nutrient control in future permits but since the study is not yet complete, the proposed permit does not include nutrient limits." Ecology, *Fact Sheet for NPDES Permit WA0029181, West Point Wastewater Treatment Plant (WWTP) and Combined Sewer Overflow*

[7]Permits with WQBELs for toxic chemicals include: copper limits for LOTT, Buckley, Enumclaw, Orting, Mt. Vernon (emergency outfall only) and lead limits for Yelm (emergency Nisqually River outfall only). One permit for a sewage treatment plant issued by EPA includes a WQBEL for copper: Puyallup.

[8] The seven permits with surface water nitrogen limits are: LOTT, Orting, Everett (Snohomish River outfall), Lake Stevens, Snohomish, North Bend, and Duvall.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

(CSO) System (Dec. 19, 2014) at 72. Other fact sheets that cite future Puget Sound nitrogen TMDLs as the basis for not including nitrogen effluent limits in permits include: Carlyon Beach, LOTT, Tamoshan, Tacoma Central, Salmon Creek (Burien), King Renton South, Bremerton, Carnation, Arlington, and Friday Harbor.

144. Ecology's "TMDL Alternative" for nitrogen pollution in Puget Sound is intended to focus solely on 90 sewage treatment plants. 2017 Scoping at 5.

145. EPA and Ecology refer to pollutants discharged from point sources that cause depleted dissolved oxygen as "far field" pollutants. For example, EPA describes nitrogen as having a far-field effect:

> Nutrients are another class of pollutants which would be examined for impacts at some point away from the discharge. The special concern is for those water bodies quiescent enough to produce strong algae blooms. The algae blooms create nuisance conditions, dissolved oxygen depletion, and toxicity problems (i.e., red tides or blue-green algae).

EPA, *NPDES Permit Writers' Manual*, Appendix A at A-17 (September 2010) at 176.

146. According to Ecology, NPDES permits may be issued without effluent limitations for far-field pollutants until a TMDL has been completed:

> If the pollutant is a far-field pollutant, is present in the discharge and is the subject of a TMDL in progress, the permit writer may defer any water quality-based limits on the pollutant until the TMDL is completed and a WLA is assigned. When the WLA is assigned the permit writer may modify the permit or incorporate the WLA at the next reissuance, depending on timing.

Ecology, *Water Quality Program Permit Writer's Manual (rev. Jan. 2015)* at 196.

147. EPA added nutrient monitoring to six permits it issued to sewage treatment plants between 2011 and 2015 because, as EPA said in a fact sheet for its 2012 permit to Joint Base-Lewis McChord:

> Given these [2007] findings, the fact that Fort Lewis is a major discharger in South Puget Sound, and the fact that both nitrogen and phosphorus contribute to a loss of dissolved oxygen in receiving waters, EPA determined that the Fort should be required to conduct monitoring of nutrient species in their effluent to better characterize their loadings throughout the year. Under the authority of Clean Water Act Section 308, this increased monitoring has been included in the draft permit. The frequency corresponds with a similar effort underway at Ecology, which will be requiring Puget Sound dischargers to increase monitoring of

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

> nutrients (nitrate and nitrite, total Kjeldahl nitrogen (TKN), ammonia, and total phosphorus) in order to inform future studies that may ultimately lead to a water quality-based effluent limit (WQBEL) or Total Maximum Daily Load (TMDL) if necessary to protect this vital waterway.

EPA, *Fact Sheet NPDES Permit Number: WA-002195-4, The U.S. Environmental Protection Agency (EPA) Plans To Reissue A Wastewater Discharge Permit To: Solo Point Wastewater Treatment Plant* (2012) at 16.

148. All permits issued by EPA to sewage treatment plants (on tribal or federal land) discharging to the greater Puget Sound area are currently expired and administratively continued.

149. The oldest of these EPA permits is for Pierce County's Suquamish Wastewater Treatment Plant. In September 2019, EPA requested that Ecology provide a CWA section 401 certification for issuance of a new permit. EPA did not include effluent limitations for nitrogen in the permit.

150. In November 2020, Ecology issued an amended CWA section 401 certification for the Suquamish plant. The certification stated:

> Nutrients discharged from wastewater treatment plants contribute to low dissolved oxygen (D.O.) levels, below state water quality criteria, in Puget Sound. Nitrogen is the limiting nutrient in Puget Sound waters, and total inorganic nitrogen (TIN) is the form of nitrogen more available for algal growth that drives eutrophication and the dissolved oxygen impairment. All wastewater dischargers to Puget Sound containing inorganic nitrogen contribute to the D.O. impairment.
>
> The Permittee's discharge contains inorganic nitrogen, and the NPDES permit must require the Permittee to control nutrients consistent with the Clean Water Act and Washington's Water Pollution Control Act. Water quality based effluent limits (WQBELs) are required for wastewater treatment plants discharging to surface waters when the discharge has reasonable potential to cause or contribute to an in-stream excursion above a narrative or numeric State water quality criteria (40 CFR 122.44(d)(1)(iii)).
>
> Washington State does not have numeric criteria for nitrogen from which to derive a WQBEL, and Ecology uses D.O. as a surrogate which requires modeling to demonstrate water quality impacts from a discharge.
>
> The nitrogen in the Permittee's discharge has reasonable potential to contribute to far-field water quality impacts. For this permit, implementing a discharge-specific numeric WQBEL for nitrogen is infeasible. This is due to the additional modeling scenarios necessary to quantify both the Permittee's far-field water quality effect and the corresponding effluent limit necessary to prevent an exceedance of the D.O. standard.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

In re First Amendment to Clean Water Act Section 401 Water Quality Certification Order No. 16892 for EPA National Pollutant Discharge Elimination System Permit No. WA0023256 – Suquamish Wastewater Treatment Plant (November 12, 2020) at 1–2.

151. Notwithstanding the lack of nitrogen effluent limits in NPDES permits and 401 certifications issued by Ecology, the state has concluded that "a comprehensive suite of measures, including watershed load reduction, is needed to fully address human-caused hypoxia in Puget Sound." 2019 Bounding Scenarios at 79.

152. On December 1, 2021, Ecology issued its Puget Sound Nutrient General Permit covering nitrogen discharges from 58 sewage treatment facilities that discharge to Puget Sound. The permit does not contain numeric effluent limits because, according to Ecology, "[w]hile Ecology has enough information to determine reasonable potential exists [that all sewage plant discharges cause or contribute to violations of water quality standards], additional modeling work is still necessary to establish numeric WQBELs." Ecology, *Fact Sheet for the Puget Sound Nutrient Draft General Permit* (December 1, 2021) at 33.

EPA and Ecology Predict Nitrogen Loads Will Increase, Causing Increased Impairment of Puget Sound

153. In their 2007–2009 PPA, EPA and Ecology noted that "[a]s the population of Washington State continues to increase, nutrient releases of nitrogen and phosphorus to surface waters will become a much larger problem. Advanced technology to treat nitrogen and phosphorus in wastewaters is readily available and may be cost effective for municipal and industrial dischargers." 2007–2009 PPA at 24.

154. In 2014, Ecology issued a study using its Puget Sound model to project the increase in human point and nonpoint source contributions of nitrogen to Puget Sound, combined with the expected impacts of climate change, to predict the extent and breadth of decreased

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

dissolved oxygen in the future. Nitrogen loads from sewage treatment plants are expected to nearly double by 2070. *See* Future Conditions Report at 78.

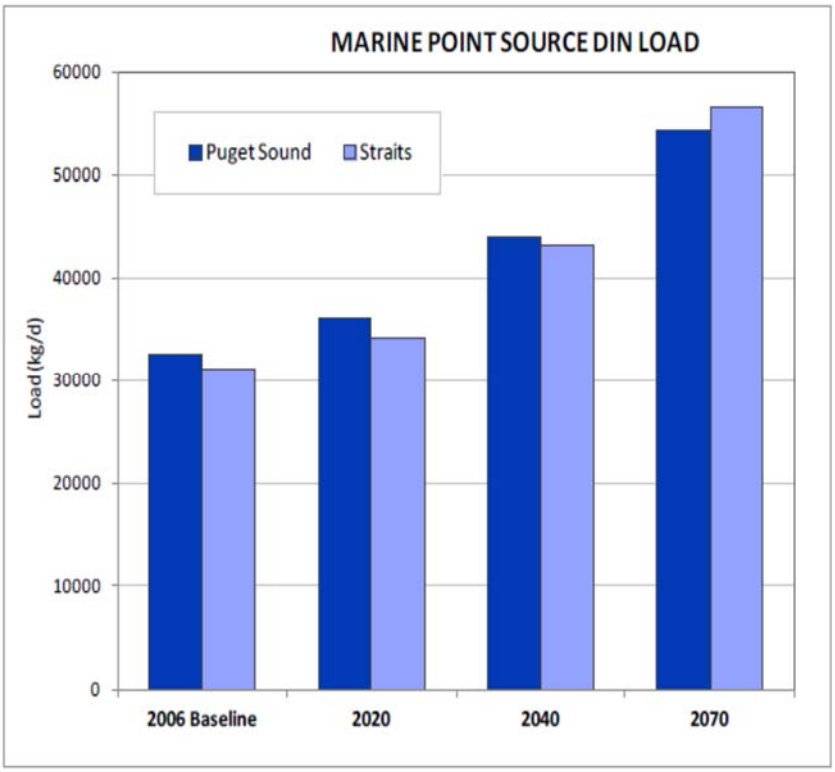

Figure 7. Projections of Future Growth in Average Annual Dissolved Inorganic Nitrogen loads from Marine Sources into Puget Sound (2014); Ecology, Puget Sound and the Straits Dissolved Oxygen Assessment Impacts of Current and Future Human Nitrogen Sources and Climate Change through 2070 (March 2014).

155. The study shows that average regional and seasonal dissolved oxygen depletion increases steadily in 2020, 2040, and 2070 compared with current conditions, with the greatest changes occurring in South Puget Sound and the southern part of Central Puget Sound. *See, e.g., id*. at 93 (fig. 44).

156. When predicted human contributions of nitrogen in 2070 are combined with future circulation impacts, future ocean trends, and future air temperatures, nearly all of the Salish Sea would experience average dissolved oxygen depletions of 0.21 mg/L to 1.10 mg/L compared to current conditions. (Then-applicable water quality standards allowed a 0.2 mg/L depletion of dissolved oxygen below "natural conditions".) *See id*. at 97 (fig. 47).

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

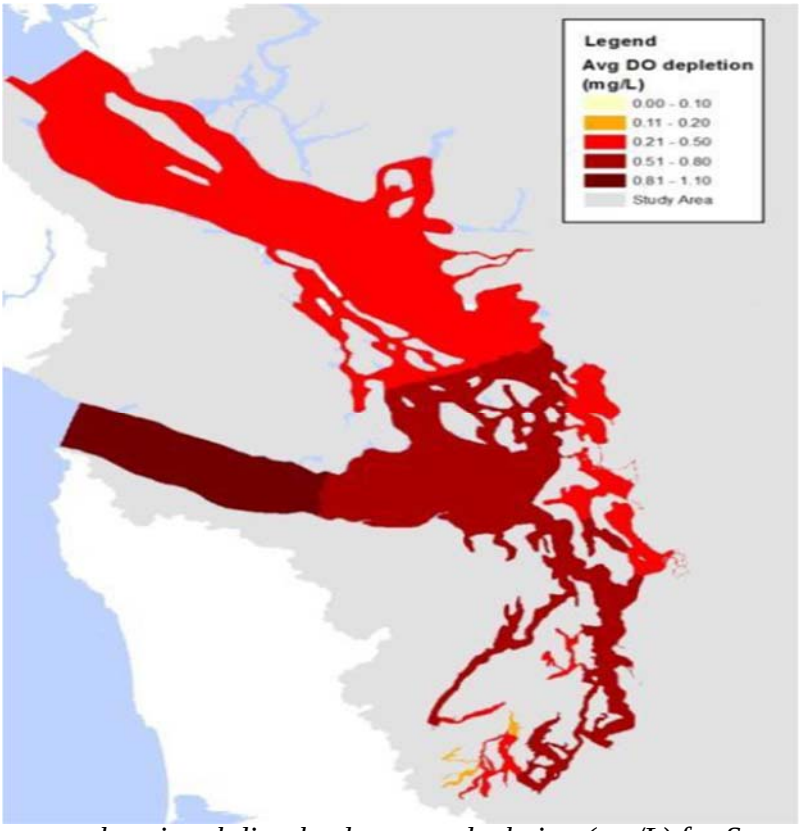

Figure 8. Average total regional dissolved oxygen depletion (mg/L) for September 1 through October 31 with the combined effect of future 2070s human sources and ocean conditions with future circulation. Ecology, Puget Sound and the Straits Dissolved Oxygen Assessment Impacts of Current and Future Human Nitrogen Sources and Climate Change through 2070 (March 2014).

Development and Implementation of a Budd Inlet TMDL Will be Hampered by Lack of a Puget Sound TMDL

157. Ecology first submitted a proposed TMDL for nitrogen to address dissolved oxygen depletion in Budd Inlet to EPA in 1992 that EPA subsequently rejected as "incomplete." Letter from Adrianne Allen, EPA Assistant Regional Counsel, to James Coon, Swanson, Thomas & Coon, Re: Civil No. C91-427R, *Northwest Environmental Advocates and Northwest Environmental Defense Center v. Carol Browner* (June 3, 1996) (response to Plaintiffs First Set of Interrogatories at 22). While still not completed nearly three decades later, in modeling Ecology has done to develop a TMDL to address dissolved oxygen impairments in Budd Inlet, the state determined that meeting water quality standards in the inlet requires controlling nitrogen discharges from sewage treatment plants in Puget Sound, external to Budd Inlet.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

158. In October 2017, Ecology reported that it had "negotiated a solution with EPA to integrate the allocations between these two projects using a bubble allocation in the Budd Inlet TMDL which represents the sum of external sources to Budd Inlet and must be met with the reductions identified in [the Salish Sea Model] SSM and this project." 2007 Scoping at 9. Ecology has described the bubble allocation—which would not include wasteload allocations to specific permittees—in the Budd Inlet TMDL as requiring a 35 or 45 percent reduction in the dissolved oxygen deficit from sewage treatment plants outside of Budd Inlet. *See* Ecology, *Description of allocations and model inputs, [Budd Inlet] Model Phase 3* (Oct. 30, 2017) at 5.

159. Without specific EPA-approved wasteload allocations, no sewage treatment plant will be required to reduce nitrogen discharges to Puget Sound that impair the dissolved oxygen in Budd Inlet notwithstanding completion of a Budd Inlet TMDL. Although Ecology states that "[e]xternal sources to Budd Inlet must meet bubble allocation," Ecology, *Puget Sound Nutrient Source Reduction Project Master Slide Deck* (February 1, 2019) at Slide 62 (Connection with Budd Inlet TMDL), the only way that this outcome can be assured is when a Puget Sound TMDL is completed with wasteload allocations to specific permitted sources that implement the Budd Inlet TMDL bubble allocation.

Lack of a Puget Sound Nitrogen TMDL Hampers the Development of TMDLs and EPA-Approved Wasteload Allocations for Waters Upstream of Puget Sound's Marine Waters

160. Since at least 2014, Ecology and EPA have known that nitrogen sources in the greater Puget Sound contribute to violations of water quality standards in other parts of Puget Sound, reconfirming in 2019 that "discharges in one basin can affect the water quality in other basins." 2019 Bounding Scenarios at 13.

161. Ecology asserts that it is in the process of developing TMDLs for dissolved oxygen depletion in waters upstream of Puget Sound, including the Sammamish River and tributaries and the Old Stillaguamish River Channel, neither of which "ha[s] targets for nutrient loading to the Puget Sound." 2017 Scoping at 8. Likewise, none of the EPA-approved TMDLs

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

that have been developed to address dissolved oxygen in the Puget Sound region have been developed to protect the downstream waters of Puget Sound. This includes: McAllister Creek in the Nisqually River watershed (2005), Lake Whatcom Creek watershed (2014), Puyallup River watershed (1994), Snoqualmie River watershed (1994), Snohomish River Estuary (1999), and Stillaguamish River watershed (2005).

162. TMDLs for nutrients in the Lower White River that flows into the Puyallup River prior to entering Puget Sound were started in 1999 to address high pH values caused by nutrients. Despite years of progress reports, TMDLs have not been completed over two decades later.

163. Without Puget Sound TMDLs, neither Ecology nor EPA can prepare upstream freshwater watershed TMDLs that are sufficient to meet dissolved oxygen water quality standards in and nitrogen loading limits for Puget Sound. Without TMDLs for freshwaters flowing into Puget Sound, Ecology is unlikely to issue NPDES permits to 28 sewage treatment plants that discharge to those waters with effluent limitations for nitrogen.

164. In 2019, Ecology confirmed that, like impacts on Budd Inlet, nitrogen sources in the greater Puget Sound impact dissolved oxygen depletion in Hood Canal.

Lack of Nitrogen TMDLs for Puget Sound Increases Discharge of Toxic Pollutants Including Contaminants of Emerging Concern

165. Toxic contamination in Puget Sound at levels high enough to cause fin erosion, protrusions, kidney and gill lesions, and liver tumors and changes in species composition has been reported at least as early as 1987. EPA has reported that killer whales in Puget Sound "are some of the most contaminated marine mammals in the world because they have bioaccumulated these chemical contaminants through the entire food web," and that "[t]oxic chemical concentrations in Killer Whales and contamination of food sources" are among the reasons the species has been listed under the Endangered Species Act. EPA, *Puget Sound Georgia Basin Transboundary Ecosystem Indicator Report* (2006) at 119–120.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

166. Studies published from 2016 to the present have demonstrated that pharmaceuticals and other drugs are discharged to Puget Sound at a rate of approximately 97,000 pounds per year and that these drugs have a measurable adverse impact on fish species including Chinook salmon. Fish fed drugs at the same level as found in the Puyallup River and Sinclair Inlet estuaries experienced reduced growth rates and metabolism disruptions, a "pattern generally consistent with starvation" that "may result in early mortality or an impaired ability to compete for limited resources." James P. Meador *et al., Adverse metabolic effects in fish exposed to contaminants of emerging concern in the field and laboratory*, 236 Environmental Pollution 850 (2018). In an earlier 2014 study, scientists concluded that "juvenile Chinook salmon migrating through contaminated estuaries in Puget Sound exhibited a strong reduction in survival (two-fold) compared to those migrating through uncontaminated estuaries[.]" *Id*.

167. In the 2007–2009 PPA, EPA and Ecology noted that they had "successfully worked together over the past few years towards mapping out an overall Puget Sound Toxic Loadings and Reduction strategy." 2007–2009 PPA at 24. Beginning in 2006, with EPA funding, Ecology produced reports on toxic loading in Puget Sound. These reports highlighted the fact that "toxic chemicals continue to persist and circulate throughout the Puget Sound ecosystem and are still being introduced via stormwater runoff, municipal sewage treatment plants, and atmospheric deposition," causing "significant concern for human health," having "acute and chronic effects on nearshore organisms," and "concentrat[ing] in larger predatory animals, ultimately affecting marine fish and mammals." Ecology, *Control of Toxic Chemicals in Puget Sound Phase 3 Data and Load Estimates* (April 2011) (hereinafter "2011 Toxic Loading") at 1. In 2010, Ecology concluded that "POTWs [publicly owned treatment works] are a significant secondary source of toxic chemicals," defining "primary" sources as toilets. Ecology, *Control of Toxic Chemicals in Puget Sound Summary Technical Report for Phase 3: Loadings from POTW Discharge of Treated Wastewater* (December 2010) at 4, 35.

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

168. After its 2011 report, which concluded "[l]ow-level loading to Puget Sound is a concern for those toxic chemicals that bioaccumulate or cycle within receiving waters and lead to persistent degraded conditions or are known to impact marine organisms at low concentrations," 2011 Toxic Loading at 89, upon information and belief, Ecology and EPA ceased evaluating toxic loading to Puget Sound.

169. Sewage treatment technology to remove nutrient pollution including nitrogen, known as advanced secondary treatment or tertiary treatment, also removes toxic pollutants including contaminants of emerging concern for which no numeric criteria exist. In 2008, Ecology confirmed that tertiary treatment of sewage significantly reduces toxics in treated sewage, including pharmaceuticals and personal care products. Ecology/EPA, *Control of Toxic Chemicals in Puget Sound, Phase 3: Pharmaceuticals and Personal Care Products in Municipal Wastewater and Their Removal by Nutrient Treatment Technologies* (January 2010).

170. No waters in Puget Sound are listed on the Washington CWA section 303(d) list for unsafe levels of contaminants of emerging concern.

171. No NPDES permits issued for discharge to Washington waters have effluent limits for contaminants of emerging concern.

172. A TMDL for nitrogen in Puget Sound will result in wasteload allocations to sewage treatment plants that require the use of advanced technology for the removal of nitrogen, technology that will also significantly reduce the discharge of toxics, including contaminants of emerging concern.

FIRST CLAIM FOR RELIEF
Violation of the Clean Water Act
(Pursuant to 33 U.S.C. § 1365(a)(2))

173. Plaintiff realleges all preceding paragraphs.

174. Washington has failed to submit any TMDLs for nitrogen and dissolved oxygen depletion, and related violations of water quality standards in Puget Sound, despite those waters' having long been on Washington's 303(d) list, despite that the causes of impairment have been

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

studied intensively for decades, and despite evidence that these pollution problems are harming Puget Sound's beneficial uses, growing in severity, and will continue to worsen.

175. Washington has repeatedly delayed completion of planned TMDLs for Puget Sound waters. Washington has announced that it will not develop TMDLs for Puget Sound, and instead, will develop a "TMDL Alternative." Washington has no credible schedule or plan for completion of TMDLs for waters in Puget Sound.

176. Washington has clearly and unambiguously abandoned its obligation to submit TMDLs for Puget Sound.

177. Washington's prolonged and ongoing failure to prepare the required TMDLs, its clear and unambiguous abandonment of its plans to complete the required TMDLs, and its lack of a schedule and credible plan for producing them constitutes the "constructive submission" of those TMDLs, which triggers the EPA Administrator's mandatory duty to review and disapprove them within thirty days, and to establish the needed TMDLs within thirty days of disapproval, pursuant to 33 U.S.C. § 1313(d)(2) and 40 C.F.R. § 130.7(d)(2).

178. EPA's failure to act on Washington's constructive submission of no TMDLs for nitrogen and dissolved oxygen depletion, and related violations of water quality standards, is a violation of EPA's mandatory duty pursuant to the CWA, 33 U.S.C. § 1313(d)(2). EPA's failure to undertake the nondiscretionary duties described above is subject to review under 33 U.S.C. § 1365(a)(2), and NWEA is entitled to an order compelling EPA to perform such duties.

SECOND CLAIM FOR RELIEF
Violation of the Administrative Procedure Act
(Pursuant to 5 U.S.C. § 702)

179. Plaintiff realleges all preceding paragraphs.

180. EPA identified Puget Sound as a priority for problem identification and corrective action planning in PPAs signed with Washington in 2007 and every year since then.

181. EPA's approval of the 2019–2021 PPA that includes the development of a "TMDL Alternative" in lieu of TMDLs for nitrogen and dissolved oxygen depletion, and related

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

violations of water quality standards, in Puget Sound is inconsistent with the CWA's requirement that TMDL priorities "tak[e] into account the severity of the pollution and the uses to be made of such waters." 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(4).

182. EPA's approval of the 2019–2021 PPA that includes the development of a "TMDL Alternative" in lieu of TMDLs for nitrogen and dissolved oxygen depletion, and related violations of water quality standards, in Puget Sound is inconsistent with the CWA mandate to establish TMDLs for waters that violate water quality standards. 33 U.S.C. § 1313(d)(1)(B), (C).

183. The EPA Regional Administrator's approval of the 2019–2021 PPA that includes the development of a "TMDL Alternative" in lieu of TMDLs for nitrogen and dissolved oxygen depletion, and related violations of water quality standards, in Puget Sound constitutes the Administrator's having carried out the mandate under 40 C.F.R. § 130.7(d)(1) that "[s]chedules for submission of TMDLs shall be determined by the Regional Administrator and the State."

184. The issuance of a "TMDL Alternative" in lieu of TMDLs relieves EPA of its obligation to review and approve or disapprove a state submission to ensure that it is consistent with the CWA, 33 U.S.C. § 1313(d)(2), including that there is reasonable assurance that assumed nonpoint source controls will take place such that allocations of pollution reductions to permitted point sources can be less than otherwise required by law, that there is a lawful margin of safety, that TMDLs are developed on the basis of statutory priorities, and that the allocations to point and nonpoint sources will result in attainment of water quality standards. *See* 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. §§ 130.2(i); 130.7(b)(4), (c), (c)(1)(ii).

185. For at least these reasons, EPA's approval of the 2019–2021 PPA was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, within the meaning of the APA, 5 U.S.C. § 706(2)(A).

REQUEST FOR RELIEF

WHEREFORE, plaintiff Northwest Environmental Advocates respectfully requests that this Court:

Western Environmental Law Center
1402 3rd Ave, Suite 1022
Seattle, WA 98101
206-487-7250

Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
503-768-6894

A. Declare that by abandoning the development of TMDLs for nitrogen and dissolved oxygen depletion, and related violations of water quality standards, to address the water quality impairments in Puget Sound, Washington has constructively submitted no TMDLs;

B. Declare that EPA failed to undertake actions and duties that are non-discretionary within the meaning of the CWA's citizen suit provision, 33 U.S.C. § 1365(a)(2), when EPA failed to review and disapprove Washington's constructive submission of no TMDLs for Puget Sound, as required by 33 U.S.C. § 1313(d)(2);

C. Order EPA to establish TMDLs for nitrogen and dissolved oxygen depletion, and related violations of water quality standards, in Puget Sound on a reasonable schedule as required by section 303(d) of the CWA, 33 U.S.C. § 1313(d);

D. Declare that EPA acted in a manner that is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law when it unlawfully approved the "TMDL Alternative" for Puget Sound in the 2019–2021 PPA;

E. Set aside and remand EPA's approval of the "TMDL Alternative" for Puget Sound in the 2019–2021 PPA;

F. Award NWEA its reasonable costs and attorneys' fees under 33 U.S.C. §1365(d) and 28 U.S.C. § 2412; and

G. Grant such other relief as the Court deems just and proper.

DATED this 7th day of December, 2021.

Respectfully submitted,

/s Andrew Hawley
Andrew Hawley (WSBA # 53052)
Western Environmental Law Center
1402 3rd Ave., Suite 1022
Seattle, WA 98101
(206) 487-7250
hawley@westernlaw.org

s/ Allison LaPlante
Allison LaPlante (OSB # 023614)
(*Pro Hac Vice Application Forthcoming*)
Earthrise Law Center
Lewis & Clark Law School
10101 S. Terwilliger Blvd.
Portland, OR 97219
(503) 768-6894
laplante@lclark.edu

Counsel for Plaintiff Northwest Environmental Advocates